JVC®

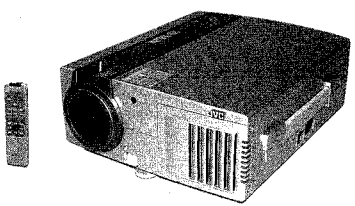
SERVICE MANUAL

D-ILA MULTIMEDIA PROJECTOR

BASIC CHASSIS
XG

DLA-G3010ZGU
DLA-G3010ZGE

D-ILA™



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SPECIFICATIONS

■GENERAL

Type	D-ILA PROJECTOR
Dimensions (W × H × D)	29.0 cm × 13.2 cm × 36.3 cm [11-1/2" × 5-1/4" × 14-3/8"] (W : excludes protrusions and handle)
Mass	6.0kg [13.2lbs]
Power requirements	AC100V – AC240V 50Hz/60Hz
Power Consumption	2.9A – 1.2A
Operating temperature	+5°C – +35°C [41°F – 95°F]
Operating humidity	20% – 80% (no-condensation)
Storage temperature	-10°C – +60°C [14°F – 140°F]
Storage humidity	20% – 80% (no-condensation)
Projection angle	**Vertical** : max. +7° **Horizontal** : max. 3° (±1.5°)×
Remote control unit operation	**RM-M3010G** Distance : 7m Angle: Horizontal =±15°, Vertical =±15°
Mass	94g (includes dry cell battery)
Accessories	Remote control unit (RM-M3010G) ×1 Dry cell battery (size : UM-4/AAA/R03) ×2 PC Cable (D-sub 3-row 15pin : 2m) ×1 Signal adapter (for Macintosh) ×1 AV cable (RCA pin plug : 1.5m) ×1 Audio cable(ø 3.5mm stereo : 3m) ×1 Power code (3-pin : 2.5m) ×1

■OPITICS

projection system	D-ILA (reflective-type active-matrix) system
D-ILA device	0.9-inch(2.3cm) measured diagonally [H:1365 pixels × V:1024 pixels] ×3 <Total : 4 193 280 pixels>
Projection lens	1.3 times (1.9:1 – 2.5:1) manual zoom lens [50% fix shift]
Screen size	42" (107cm) [tele .min.] – 300" (762cm) <recommended> ✻ measured diagonally with aspect ratio 4:3
Projection distance	**Tele side :** approx. 2m (6.56ft) – approx. 15m (49.22ft) **Wide side :** approx. 2.5m(8.20ft) – approx. 12m(39.37ft)
Light lamp	**BHL5005-SG** UHP (Ultra High-Pressure mercury) lamp 200W

■ELECTRIC

Color system	NTSC3.58 / NTSC4.43 / PAL / SECAM (Automatic switching / Manual switching)
Resolution	**Video input (4:3)** : horizontal 1000TV lines **RGB input** : H:1365 dots × V:1024 dots (S-XGA full resolution)
Scanning frequency	**Horizontal** : 15kHz – 105kHz **Vertical** : 50Hz – 90Hz
Keystone distortion correction	Top-bottom tilt : ±20°
Audio power output	1W (8Ω) : monaural
Speakers	4cm [1-5/8"] 8Ω round type ×1
Fuse	⚠QMF51D2-6R3J1 (6.3A)

■INPUT CONNECTORS

VIDEO	
VIDEO IN	Select VIDEO or Y/C
VIDEO	Composite video signal BNC connector ×1 1V(p-p) 75Ω negative sync.
Y / C	Luminance/Chroma separate video signal mini DIN 4-pin ×1 **Y** : 1V(p-p) 75Ω negative sync. **C** : 0.286V(p-p) (burst) 75Ω [NTSC] 0.3V(p-p) (burst) 75Ω [PAL]
AUDIO	RCA pin jack ×1 (monaural) 500mV(rms) high impedance (over 47kΩ) ✻ combined use VIDEO and Y/C
COMPUTER	Select PC1 or PC2
PC1	Analog RGB signal mini D-sub 15-pin ×1 **R** : 0.7V(p-p) 75Ω **G** : 0.7V(p-p) 75Ω **B** : 0.7V(p-p) 75Ω **Sync. on G** : 1V(p-p) 75Ω negative **Sync. (H/CS • V)** : 1V(p-p) – 5V(p-p) high impedance ✻ Sync. mode : automatic selection
PC2	Select R/G/B or Y/PB(B-Y)/PR(R-Y) Analog RGB signal / Color-differential component signal / DTV format signal / External sync. signal BNC connector ×5
<RGB input>	
R	0.7V(p-p) 75Ω
G	0.7V(p-p) 75Ω
B	0.7V(p-p) 75Ω
Sync. on G	1V(p-p) 75Ω negative
H / CS (HD)	1V(p-p) – 5V(p-p) high impedance positive/negative
V (VD)	1V(p-p) – 5V(p-p) high impedance positive/negative ✻ Sync. mode : automatic selection
<Y/PB/PR input>	
Y	1V(p-p) 75Ω 3-value sync. / negative sync.
PB	±0.35V(p-p) 75Ω
PR	±0.35V(p-p) 75Ω
B-Y	0.7V(p-p) 75Ω
R-Y	0.7V(p-p) 75Ω
PC AUDIO	Select PC1 or PC2 (combined use) ø 3.5mm stereo mini-jack ×1 500mV(rms) high impedance (over 47kΩ)

■CONTROL CONNECTORS

CONTROL	
RS-232C	Using external computer control D-sub 9-pin ×1 **Baud rate** : 9600bps / 19200bps **Data length** : 8 bits (no parity) **Stop bit** : 1 bit **Flaw control** : none
REMOTE	Using remote control unit wired connection ø 3.5mm stereo mini-jack ×1 5V power / ground / control signal ✻ Operating guaranteed cable length : 3m

Design & specification are subject to change without notice.

OPERATING INSTRUCTIONS [DLA-G3010ZGU]

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D-ILA MULTIMEDIA PROJECTOR
MANUEL D'INSTRUCTIONS : PROJECTEUR MULTIMEDIA D-ILA

INSTRUCTIONS

DLA-G3010ZGU

For customer Use:
Enter below the Serial No. which is located on the rear panel of the cabinet. Retain this information for future reference.

Pour l'utilisateur:
Inscrivez ci-dessous le No de série situé sur le panneau arrière du coffret de l'appareil. Conservez ces informations à titre d'information.

Model No.
No de modèle DLA-G3010ZGU

Serial No.
No de série

DLA-G3010ZGU D-ILA MULTIMEDIA PROJECTOR

JVC
VICTOR COMPANY OF JAPAN, LIMITED

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VDP0407-0

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SAFETY PRECAUTIONS

IMPORTANT INFORMATION

WARNING :

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION :

To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel.

This projector is equipped with a 3-blade grounding-type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

FCC INFORMATION (U.S.A. only)

CAUTION:

Changes or modification not approved by JVC could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

About burning-in of the D-ILA device

Do not allow the same still picture to be projected for a long time or an abnormally bright video picture to be projected. Do not project video images with high-intensity or high-contrast on a screen. The video image could be burned in to the D-ILA device.
Use special care when projecting video games or computer program images. There is no problem with ordinary video-cassette playback images.

About the installation place

Do not install the projector in a place that cannot support its weight securely.
If the installation place is not sturdy enough, the projector could fall or overturn, possibly causing personal injury.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety, but **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD.** In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these "Important Safeguards" carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Place the projector near a wall outlet where the plug can be easily unplugged.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.)

For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep / distance more than 11-¾" (30 cm).

- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
- Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  - a) When the power supply cord or plug is damaged.
  - b) If liquid has been spilled, or objects have fallen on the product.
  - c) If the product has been exposed to rain or water.
  - d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - e) If the product has been dropped or damaged in any way.
  - f) When the product exhibits a distinct change in performance – this indicates a need for service.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- When connecting other products such as VCR's, and personal computers, you should turn off the power of this product for protection against electric shock.
- Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when overheated.
- Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
- Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
- Do not drop, hit, or damage the light-source lamp (lamp unit) in any way. It may cause the light-source lamp to break and lead to injuries. Do not use a damaged light-source lamp. If the light-source lamp is broken, ask your dealer to repair it. Fragments from a broken light-source lamp may cause injuries.
- The light-source lamp used in this projector is a high pressure mercury lamp. Be careful when disposing of the light-source lamp. If anything is unclear, please consult your dealer.
- Do not "ceiling-mount" the projector to a place which tends to vibrate, otherwise, the attaching fixture of the projector could be broken by the vibration, possibly causing it to fall or overturn, which could lead to personal injury.
- Use only the accessory cord designed for this product to prevent shock.

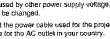
  The power supply voltage rating of this product is AC 120 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

  When it is used by other power supply voltage, power cable must be changed.

  Ensure that the power cable used for the projector is the correct type for the AC outlet in your country.

  Consult your product dealer.

Power cord



Power supply voltage: AC 120 V

***DO NOT allow any unqualified person to install the unit.**
Be sure to ask your dealer to install the unit (eg. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

ENGLISH

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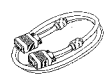
Accessories

The following accessories are included with this projector. Check for them; if any item is missing, please contact your dealer.

■ Remote control unit (RM-M3010G)

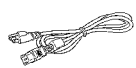
■ Personal computer connection cable [approx. 9.84 ft (approx. 3 m)] (D-sub, 3-row 15 pin)



■ AA/R6-size dry cell battery (x2) (for checking operation)

■ AV connection cable [approx. 4.92 ft (approx. 1.5 m)]

■ Power cord [approx. 8.2 ft (approx. 2.5 m)]



■ Remote cable [approx. 9.84 ft (approx. 3 m)] (3.5 mm dia. stereo mini plug)

■ Conversion adapter for Mac (for Macintosh)

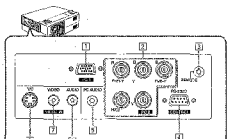
Memo

• The DLA-G3010ZGU model is comprised of the projector main unit (DLA-G3010ZG model) and the above accessories.

ENGLISH

DLA-G3010ZGU
DLA-G3010ZGE

Connector Panel



1 **PC (computer) 1 input terminal (D-sub 3-row 15 pin)**
This is an input terminal dedicated to computer signals (RGB video signals and sync signals).
Connect the display output terminal of the computer to this terminal. When a Macintosh computer is to be connected, use the supplied conversion adapter for Mac.

Note

- When computer-related signals are input, the uppermost edge of the image may appear to bow if the sync signal input is composite sync (Cs) or G on sync signal. In this case, use separate sync signals for vertical sync (V) and horizontal sync (H).

2 **PC (computer) 2 input terminals (BNC × 5)**
These are multipurpose video input terminals that allow input of the following signals.

- Analog RGB signals, vertical sync (V) signals, and horizontal sync (H) signals / composite signals (Cs). (Devices which have analog RGB signal output terminals can be connected.)
  ** Input of external sync signals is automatically detected. Detection of H/V signals or Cs signals causes automatic switching to external sync. The priority order is H/V > Cs.*
- Component signals (Y, B-Y, R-Y) or DTV-format (Y, Pb, Pr) signals. (Devices which have component output terminals can be connected.)
  ** For details about DTV format signals (480i, 480p, 720p, 1080i) compatible with this unit, refer to page 21.*

Notes

- In order to use this terminal, the input signal must be used to select the "PC 2 (BNC)" setting in the option items of the menu. Use the input signal to change the setting. (See page 39.)
- When computer-related signals are input, the uppermost edge of the image may appear to bow if the sync signal input is composite sync (Cs) or G on sync signal. In this case, use separate sync signals for vertical sync (V) and horizontal sync (H).

3 **REMOTE terminal (stereo mini jack)**
To use the remote control as a wired unit, connect the supplied remote cable between the remote control's terminal and this jack. (See page 20.)
** The remote sensor will stop working when the cable is connected to the remote terminal.*

4 **RS-232C CONTROL terminal (D-sub 9 pin)**
This is the RS-232C interface-specified terminal. The projector can be controlled by a computer connected externally.
** For details, refer to pages 28 and 66.*

5 **PC AUDIO (computer audio) input terminal (mini jack)**
This is an monaural-audio input terminal for a device connected to the PC 1 or PC 2 terminals. Connect the audio output signal of a device to be used to this terminal. The input audio signal is reproduced by the speaker of the projector.

Note

- When the PC input terminal signal source (PC1 or PC2) is switched with the PC button, it is necessary to reconnect the audio cable to the active device since the projector has only a single PC AUDIO input terminal.

6 **AUDIO input terminal (RCA pin jack)**
This is a monaural-audio input terminal for devices connected to the VIDEO IN terminals, such as a video deck, etc. Connect the audio output signal of a device to be used to this terminal. The input audio signal is reproduced by the speaker of the projector.

Note

- When the video signal source (Y/C or VIDEO) is switched with the VIDEO button, it is necessary to reconnect the audio cable to the active device since the projector has only a single AUDIO input terminal.

7 **VIDEO (composite video) input terminal (RCA pin jack)**
Connect this terminal to the composite video output terminal of a video deck, etc.

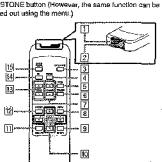
8 **Y/C (S-video) input terminal (Mini DIN 4 pin)**
Connect this terminal to the S-video output terminal of a video deck, etc.

Remote Control Unit

On the remote control, the same buttons as on the control panel of the projector are provided except for the following buttons. For the same buttons, operation is the same in principle.

For remote control only:
DIGITAL ZOOM +/– buttons, QUICK ALIGN button, FREEZE button

For projector only:
KEYSTONE button (however, the same function can be carried out using the menu.)



1 **Remote control's signal transmitter**

2 **Wired remote control terminal**
To use the remote control as a wired unit, connect the supplied remote cable between this terminal and the REMOTE terminal on the back of the projector. (See page 20.)
** The remote control's signal transmitter will stop working when the cable is connected to this terminal.*

3 **OPERATE button**
When the projector is in the stand-by mode, press this button one second or more, and the projector is turned on, causing the OPERATE indicator to light.
Press it one second or more again, and the projector goes into the cool-down mode, then stand-by mode. (See page 30.)
** When the light-source lamp is turned on it will slowly become brighter. It will take more than a minute for the light-source lamp brightness to reach a steady level.*
** The OPERATE button will not work for approximately 1 minute from when the light-source lamp is turned on. Use the button after approximately 1 minute.*

Memo

While in the cool-down mode (STAND BY indicator is blinking):
Even if you press the OPERATE button, the projector is not turned on. Wait until the projector enters stand-by mode (STAND BY indicator stays lit).

4 **VIDEO button**
Use this button to select a device such as a video deck connected to the VIDEO IN terminal (VIDEO or Y/C input terminal) of the projector. Each time you press the button, the selection alternates between Y/C and VIDEO. (See page 31.)
** "Y/C" or "VIDEO" will be displayed on the top right of the projected image. (This function can be disabled by the menu.)*

5 **HIDE button**
Use this button to turn off the image on the screen and audio sound temporarily. Pressing it again makes the image and audio sound to resume. (See page 33.)

6 **FREEZE button**
During projection of an image on the screen, press this button to obtain a still picture.
To restore normal projection, press it again. (See page 35.)
** Depending on the video signal source (UXGA, etc.), this button does not work.*

7 **VOLUME +/– buttons**
Use these buttons to adjust the sound volume:
+ : Increase the volume level. (0 → 60)
– : Decrease the volume level. (60 → 0)
(See page 32.)

8 **MENU button**
Use this button to enter or exit the menu mode. The main menu appears or disappears at the screen. For details, refer to "Basic Menu Operation" on page 40.

9 **ENTER button**
This button is used in the menu mode. Use to display the hierarchical menus. Also use when "ENTER" is displayed against the item on the menu screen or when the "All reset" selection is confirmed. For details, refer to "Basic Menu Operation" on page 40.

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p **Cursor buttons ↑/↑/←/→**
These buttons are used in the menu mode to select an item or to set or adjust the value. For details, refer to "Basic Menu Operation" on page 40.

q **ESCAPE button**
This button is used in the menu mode to return to the previous menu. When the main menu is displayed, this button will cause the menu to disappear. For details, refer to "Basic Menu Operation" on page 40.

w **PRESET button**
This PRESET button only works as a reset button for the direct button adjustment of the VOLUME button and KEYSTONE button of the control panel and the VOLUME button and DIGITAL ZOOM button of the remote control. When adjusting the volume, keystone or digital zoom (when the setting is displayed on the screen) the adjusted value is reset to that which was set when the projector was shipped from the factory. Of the menu items, this button only works for the keystone setting screen.

e **DIGITAL ZOOM +/– buttons**
A part of image can be magnified up to four times on the screen.
Each time the + or – button is pressed, the image is enlarged or the enlarged image is reduced by a certain degree. (See page 35.)
** images which are enlarged with the digital zoom become less clear.*
** Depending on the video signal source (UXGA, etc.), this button does not work.*

r **PC button**
Use this button to select a device connected to the PC 1 or PC 2 terminals. Each time you press the button, the selection alternates between PC 1 and PC 2. (See page 31.)
** "PC 1" or "PC 2" will be displayed on the top right of the projected image. (This function can be disabled using the menu.)*

t **QUICK ALIGN. (Quick Alignment) button**
Use this button to automatically align "Brightness", "Contrast", "Horizontal and vertical position", "Tracking" and "Phase" for the projected image.
During the automatic alignment, "Quick Alignment" appears on the screen, and disappears after alignment is finished. (See page 34.)
** The "Quick Alignment" function only works when the signal is input from the input terminal of either PC 1 or PC 2. It does not work when the signal is input from the VIDEO IN terminal (VIDEO or Y/C input terminal).*

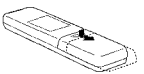
CAUTION

- Automatic alignment with the quick alignment function should be carried out on a bright still-picture. This function may not work correctly on a dark picture or motion-picture. If adjustment with this function is not satisfactory, adjust "Brightness", "Contrast", "Horizontal and vertical position", "Tracking" and "Phase" in the menu mode.

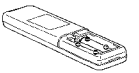
Installing Batteries

Install batteries in the remote control. If the remote control has started to work erratically, replace the batteries.

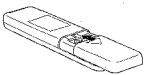
1 Open the back cover.
Push on the back cover, sliding it in the direction of the arrow.



2 Install the batteries.
Place the two supplied batteries (AA/R6-size) in the remote control as illustrated below.



3 Close the back cover.
Slide the back cover in the direction of the arrow until a click is heard.



Precautions for using batteries

If batteries are used incorrectly, they may crack or leak liquid. This could cause a fire, burn, malfunction, or staining or damaging of the surroundings.

Beware of the following:

- Do not mix new and old batteries.
- Do not mix different types of batteries as they differ in characteristics.
- Place batteries so they match the polarities indicated: (+) to (+) and (–) to (–).
- Be sure to put the minus (–) end in first to avoid short-circuiting.
- Use only designated batteries.
- Remove the batteries if the remote is not to be used for a prolonged period.
- When the batteries are exhausted, replace them immediately. Otherwise, liquid could leak, or malfunction could occur due to leaking liquid. If the leaked liquid contacts the skin, wipe it off with a cloth, otherwise the skin could become rough.
- Do not put batteries into a fire or try to recharge them.
- Batteries run for six months to one year in normal use. However, the batteries supplied are for confirming operation and may not run that long. When the remote control starts failing to work properly, replace the batteries with new ones.

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Installing the Projector

Precautions for Installation

CAUTIONS

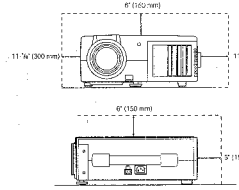
Do not install the projector in the following places:

- Where there is water, humidity or dust.
- Where the projector may be subjected to oil, smoke or cigarette smoke.
- On a soft surface such as a carpet or cushion.
- Where the projector may be subjected to direct sunlight.
- Where temperature is high or humidity is low.
  Allowable operation temperature range: 41°F to 95°F (+5°C to +35°C)
  Allowable relative humidity range: 20% to 80% (no condensation)
  Allowable storage temperature range: 14°F to 140°F (–10°C to +60°C)

■ When installing the projector, observe the following:

- Do not use the projector placed on its side.
  Avoid using the projector placed on its side. This could cause a malfunction.
- Use the projector within the specified angle.
  Do not use the projector while it is set more than ±8° horizontally (left/right), or more than ±25° vertically (up/down). This could cause color variation or shorten the lamp life.
- Do not block the exhaust vents.
  Do not use a cover which encloses the projector air-tight or blocks the exhaust vents. Allow sufficient space around the projector. When the projector is enclosed in a space of the following dimensions, use an air conditioner so the temperature inside becomes equal to the outside temperature.

Allowable minimum space required

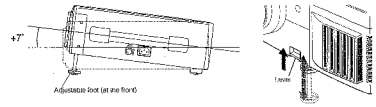


Adjusting the Inclination of the Projector

The vertical angle and the leveling of the projector can be adjusted with the adjustable feet at the bottom of the projector.

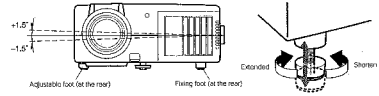
■ Adjusting the vertical angle of the projector

While pushing the lever upward, raise the projector. The adjustable foot at the front automatically extends (up to approx. 1-3/4" (approx. 43 mm)).
To retract the foot, push the lever and lower the projector slowly; the projector is fixed at the position where you release the lever.



■ Leveling the projector

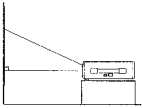
Lift the projector, rotate the rear adjustable foot, and adjust the horizontal angle until the projector is level.



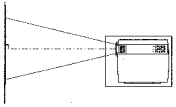
Installing the Projector against the Screen

The projector should be placed so that the center line of the lens is at a right angle to the screen as shown in the following figures.

■ **Side view**



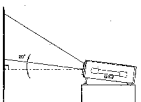
■ **Top view**



■ Trapezoidal-distortion correctable maximum angle

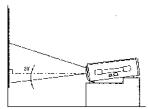
The projector has a function to correct the trapezoidal distortion of the projected image on the screen.
To correct this distortion, use the KEYSTONE buttons on the projector. (Refer to "Removing the Trapezoidal Distortion of the Image" on page 33.) Also, correction is possible by using the "Keystone" menu. (Refer to "Setting and Adjusting Other Functions (OPTIONS)" on page 50.)

Correctable angle:



Up to approx. 20° upward from the horizontal line

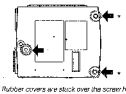
Correctable angle:



Up to approx. 20° downward from the horizontal line

Mounting the Projector

When mounting the projector is required, do it using the embedded three screw holes (M6 nuts) on the bottom of the projector. Be sure to use all screw holes shown in the figure when mounting the projector.



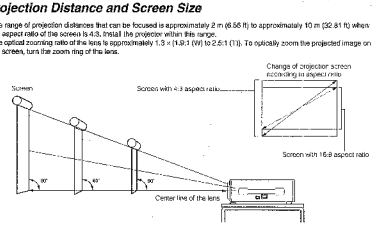
* *Rubber covers are stuck over the screw holes.*

CAUTIONS

- To ceiling-mount and adjust the projector, special expertise and techniques are necessary. Be sure to ask your dealer or a specialist to perform this work.
- When suspending the projector from the ceiling, use a dedicated suspension fixture (not supplied).
- As the depth of the screw holes is 7/16" (10 mm), use screws shorter than 7/16" (10 mm). Otherwise, the screws will damage the internal parts of the projector, causing a malfunction.

Projection Distance and Screen Size

- The range of projection distances that can be focused is approximately 2 m (6.56 ft) to approximately 10 m (32.81 ft) when the aspect ratio of the screen is 4:3. Install the projector within this range.
- The optical zooming ratio of the lens is approximately 1.3 × (1.9:1 (W) to 2.5:1 (T)). To optically zoom the projected image on the screen, turn the zoom ring of the lens.



Notes

- When installing a screen, use a 4:3 aspect-ratio picture.
  (A 16 : 9 aspect-ratio picture is projected based on the width of the range in which a 4:3 aspect-ratio picture is projected.)
- The diagonal length of a 16:9 aspect-ratio screen is about 91.8% that of a 4:3 aspect-ratio screen. This value is only a guide (reference).
- If sunlight or lamp light strikes the projection screen directly, the picture tends to become pale and dim. Use a curtain or other means to shield the light.
- Set the projector horizontally on a surface that is within the range of adjustable angles (up/down adjustment angle: +7° : horizontal adjustment angle: ±1.5°).
- The values listed in the Table "Relationship between Projection Distances and Projection Screen Sizes" on the next page are provided only as a guide (reference). The projected image size may vary depending on the manufacturing tolerance of the projection lens.
- If the keystone is adjusted, the screen becomes smaller.
- When using a projection screen size of 55" or less, it is recommended to use the projector with T (tele-) side. Using it with W (wide) side is not recommended.
- The guaranteed projection distance range from approx. 6.56 ft (2 m) to 32.81 ft (10 m).

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■ Relationship between projection distances and projection screen sizes

Projection screen size of 4:3 aspect ratio (Diagonal length)	Approximate projecting distance		
	W (Wide)	~	T (Tele-)
40" (approx. 102.7 cm)	——— *	~	approx. 5.66 ft (approx. 2.03 m)
45" (approx. 114.3 cm)	——— *	~	approx. 7.15 ft (approx. 2.18 m)
50" (approx. 127.0 cm)	——— *	~	approx. 7.97 ft (approx. 2.43 m)
55" (approx. 139.7 cm)	approx. 6.79 ft (approx. 2.07 m)	~	approx. 8.79 ft (approx. 2.68 m)
60" (approx. 152.4 cm)	approx. 7.41 ft (approx. 2.26 m)	~	approx. 9.61 ft (approx. 2.93 m)
65" (approx. 165.1 cm)	approx. 8.07 ft (approx. 2.46 m)	~	approx. 10.42 ft (approx. 3.18 m)
70" (approx. 177.8 cm)	approx. 8.69 ft (approx. 2.65 m)	~	approx. 11.25 ft (approx. 3.43 m)
75" (approx. 190.5 cm)	approx. 9.35 ft (approx. 2.85 m)	~	approx. 12.07 ft (approx. 3.68 m)
80" (approx. 203.2 cm)	approx. 9.97 ft (approx. 3.04 m)	~	approx. 12.89 ft (approx. 3.93 m)
85" (approx. 215.9 cm)	approx. 10.59 ft (approx. 3.23 m)	~	approx. 13.71 ft (approx. 4.18 m)
90" (approx. 228.6 cm)	approx. 11.25 ft (approx. 3.43 m)	~	approx. 14.53 ft (approx. 4.43 m)
95" (approx. 241.3 cm)	approx. 11.87 ft (approx. 3.62 m)	~	approx. 15.35 ft (approx. 4.68 m)
100" (approx. 254.0 cm)	approx. 12.53 ft (approx. 3.82 m)	~	approx. 16.17 ft (approx. 4.93 m)
110" (approx. 279.4 cm)	approx. 13.78 ft (approx. 4.20 m)	~	approx. 17.81 ft (approx. 5.43 m)
120" (approx. 304.8 cm)	approx. 15.06 ft (approx. 4.59 m)	~	approx. 19.45 ft (approx. 5.93 m)
130" (approx. 330.2 cm)	approx. 16.33 ft (approx. 4.98 m)	~	approx. 21.06 ft (approx. 6.42 m)
140" (approx. 355.6 cm)	approx. 17.61 ft (approx. 5.37 m)	~	approx. 22.70 ft (approx. 6.92 m)
150" (approx. 381.0 cm)	approx. 18.89 ft (approx. 5.76 m)	~	approx. 24.33 ft (approx. 7.42 m)
160" (approx. 406.4 cm)	approx. 20.17 ft (approx. 6.15 m)	~	approx. 25.98 ft (approx. 7.92 m)
170" (approx. 431.8 cm)	approx. 21.42 ft (approx. 6.53 m)	~	approx. 27.62 ft (approx. 8.42 m)
180" (approx. 457.2 cm)	approx. 22.70 ft (approx. 6.92 m)	~	approx. 29.26 ft (approx. 8.92 m)
190" (approx. 482.6 cm)	approx. 23.98 ft (approx. 7.31 m)	~	approx. 30.90 ft (approx. 9.42 m)
200" (approx. 508.0 cm)	approx. 25.26 ft (approx. 7.70 m)	~	approx. 32.54 ft (approx. 9.92 m)

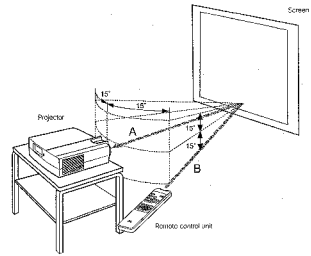
*: Out of guaranteed projection distance

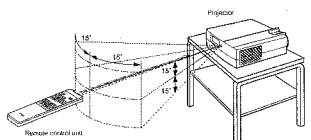
Effective Range and Distance of the Remote Control Unit

The remote control unit can be used as either a wireless remote control unit or a wired one.

■ Using as a wireless remote control unit

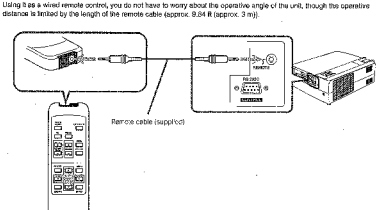
Aim the remote control unit toward the remote sensor on the front or the rear of the projector.
The operable distance of the remote control unit is about 22.97 ft (7 m) for direct reception. The remote control unit can be used by having it reflected on the screen. In this case, the total distance of "A+B" should be about 22.97 ft (7 m) or less. The operable angles of the remote control unit are 15° right and left, and 15° up and down.





■ Using as a wired remote control unit

Connect the supplied remote cable between the wired terminal of the remote control unit and the REMOTE terminal on the rear of the projector.
Using it as a wired remote control, you do not have to worry about the operative angle of the unit, though the operative distance is limited by the length of the remote cable (approx. 9.84 ft (approx. 3 m)).



Note

• When the remote control unit is used as a wired unit, its signal transmitter and the projector's remote sensor do not work.

CAUTION

• Do not extend the remote cable. Doing so could cause a malfunction of the projector.

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Connecting to Various Devices

Before connection, be sure to turn off the projector and connected devices.
Read the manual which comes with each device thoroughly.

Signals that Can Be Input to the Projector

The following signals can be input to the projector.

■ Video signals

(1) Response to color systems

Color system / Input terminal	NTSC	NTSC4.43	PAL	SECAM
VIDEO	○	○	○	○
Y/C	○	○*1	○	- - - -
Y, Pʙ/B-Y, Pʀ/R-Y*3	○*2	○*2	○*2	○*2
G, B, R, H/Cs, V*4	○*2	○*2	○*2	○*2

*1:Responds if Y/C output is available.
*2:Signifies that component signals ("Y, Pʙ, Pʀ" / "Y, B-Y, R-Y" / "G, B, R, H/Cs, V") conform to the signal timing (synchronization and video period) of each color system. The color systems are used for convenience only.
*3:To use these signals, it is required to set the "PC2 (BNC)" item in the submenu Options 1 to "YPʙPʀ". (See page 50.)
*4:To use these signals, it is required to set the "PC2 (BNC)" item in the submenu Options 1 to "RGB". (See page 50.)

(2) Response to double density (*5), high-vision signals

Input terminal	NTSC*6	NTSC*7	High-vision signal
Y, Pʙ/B-Y, Pʀ/R-Y*4	○	○	○
G, B, R, H/Cs, V*3	○	○	○

*5:Signals whose density of scanning lines/field is twice as high.
*6:Responds to signals whose horizontal scanning frequency is 31.5 kHz. NTSC can be made twice as dense by a line doubler (separately available; recommended article). Also, possible to respond to fully-specified, decoded wide-screen-vision signal and decoded 525P progressive signal.
*7:Responds to signals whose horizontal scanning frequency is 33.5 kHz. PAL can be made twice as dense by a line doubler (separately available; recommended article).
*3:To use these signals, it is required to set the "PC2 (BNC)" item in the submenu Options 1 to "YPʙPʀ". (See page 50.)
*4:To use these signals, it is required to set the "PC2 (BNC)" item in the submenu Options 1 to "RGB". (See page 50.)

(3) Response to DTV-format signals

DTV-format signals (480i, 480p, 720p, 1080i) can be input to the Y, Pʙ/B-Y, Pʀ/R-Y*10 input terminals.
*10:To use these signals, it is required to set the "PC2 (BNC)" item in the submenu Options 1 to "YPʙPʀ". (See page 50.)

■ Computer signals

Signals with the following scanning frequencies can be input to the PC 1 or PC 2 (G, B, R, H/Cs, V) terminals.

Horizontal scanning frequency	15kHz - 105kHz
Vertical scanning frequency	50Hz - 85Hz

Be sure that the computer to be used suffices the following conditions:

• The computer has the video signal output port.
Be sure that the computer has the video signal output port by reading the instruction book of the computer.
The video signal output port is generally called as "RGB port", "monitor port", or "video port". If the computer-monitor hybrid type or note type is used, it may need to prepare for an external output port. Also, there will be the type to which an external output port cannot be installed.

• The resolution and the scanning frequencies are within the range specified in the table on page 22.
Be sure that the resolution and the scanning frequencies of the video signal are within the range. A video signal out of range cannot be used. (Even signals out of the range could be projected. However, it may not sharp enough. On the other hand, even some of the signals within the range may require adjustment depending on the video board used.)
When a signal other than listed in the table on page 22 is input, the image could be partially erased or an unneeded fold-over image could appear.
Even signals in the frequency range that can be input may not be displayed normally depending on the type of the signal. Composite sync (Cs) and G on Sync signals cannot be handled depending on the devices connected.

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■ Allowable input signals

Signal			Horizontal resolution Hor [Pixels]	Vertical resolution Ver [Lines]	Horizontal frequency H [kHz]	Vertical frequency V [Hz]
PC system	PC98	VESA350	640	350	37.86	84.13
	PC/AT	PC98	640	400	24.83	56.42
	DOS/V	VGA 60Hz	640	480	31.47	59.94
		VGA 72Hz	640	480	37.86	72.81
		VGA 75Hz	640	480	37.50	75.00
		VGA 85Hz	640	480	43.27	85.01
		SVGA 56Hz	800	600	35.16	56.25
		SVGA 60Hz	800	600	37.88	60.32
		SVGA 72Hz	800	600	48.08	72.19
		SVGA 75Hz	800	600	46.88	75.00
		SVGA 85Hz	800	600	53.67	85.08
		XGA 43Hz	1024	768②	35.52	43.48
		XGA 60Hz	1024	768	48.36	60.00
		XGA 70Hz	1024	768	56.48	70.07
		XGA 75Hz	1024	768	60.02	75.03
		XGA 85Hz	1024	768	68.68	85.00
		SXGA 43Hz	1280	1024②	46.43	43.44
		SXGA 60Hz	1280	1024	63.98	60.02
		SXGA 75Hz	1280	1024	79.98	75.03
		SXGA 85Hz	1280	1024	91.15	85.02
		UXGA 60Hz	1600	1200	75.00	60.00
	Mac	MAC13	640	480	35.00	66.67
		MAC16	832	624	49.73	74.55
		MAC19	1024	768	60.24	74.93
		MAC21	1152	870	68.68	75.06
Video system	Video	HDTV (1035i) 60Hz			33.75	60.00
		HDTV (1035i) 59Hz			33.72	59.94
		480p	720	483	31.47	59.94
		720p 60Hz	1280	720	45.00	60.00
		720p 59Hz	1280	720	44.96	59.94
		1080i 60Hz	1920	1080i②	33.75	60.00
		1080i 59Hz	1920	1080i②	33.72	59.94
		NTSC			15.734	60
		PAL			15.625	50
		SECAM			15.625	50

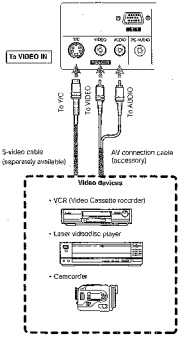
Notes

- The resolution for the input signals is listed in the above table.
- Enter signals in the frequency range that can be input may not be displayed normally depending on the type of the signal.
- When a signal other than listed above is input, the image could be partially erased or an unpacked fold-over image could appear.
- Some signals other than listed above can be displayed. But they may require adjustment.
- Even some of the signals listed above may require adjustment depending on the video board used.
- Composite sync [Cs] and G on Sync signals cannot be handled depending on the devices connected.
- The VGA signal of the PC system could be displayed in 480p mode of the VIDEO system. (In this case, the projector enters video menu mode when the MENU button is pressed.)

Connecting to Video Devices

Before connection, be sure to turn off both the projector and video device.

- Read thoroughly the manual that comes with each video device.
- Use the supplied AV connection cable. An AV connection cable with an S-video (Y/C) terminal is not supplied.



Notes

- Connect a composite image signal output device or Y/C (S-video) image output device.
- When an image signal is input to the VIDEO IN (VIDEO or Y/C) terminal, input the sound signal to the AUDIO terminal of the VIDEO IN terminals.

Memo

- When connecting a video device, use a TBC along with it, or one which has a built-in TBC.
- Use of an extension cable to connect a video device and the projector could cause video degradation.
- When a signal with much jitter is reproduced on a VCR, or special effect playback is performed, the upper part of the image or the image itself may be erased or distorted.

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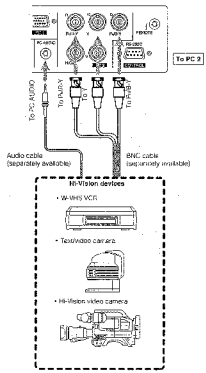
Connecting to Hi-Vision Devices

Before connection, be sure to turn off both the projector and Hi-Vision devices.
- Read thoroughly the manual that comes with each Hi-Vision device.
- Use separately available BNC cables and audio cables to connect Hi-Vision devices.

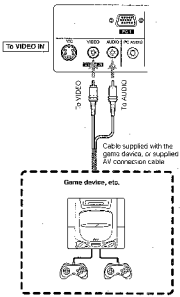


Notes
- Connect a component signal output device or DTV-format signal output device.
- When the PC2 input terminal is used, "PC2 (BNC)" must be selected from the menu options. Refer to "Setting and Adjusting Other Functions (OPTIONS)" on page 50.
- When the image signal is input to the PC2 input terminal, input the sound signal to the PC AUDIO terminal.

Memo
- Other devices with component signal output terminals (DVD player (NTSC), etc.) can be connected. ("DVD: Digital Video Disc)
- DTV-format signals (480i, 480p, 720p, 1080i) can be input. For DTV-format signals which can be handled, refer to "DTV-format signals" on page 21.

Connecting to Other Devices

Before connection, be sure to turn off both the projector and other devices to be connected.
- Read thoroughly the manual that comes with the device to be connected.
- Use the supplied AV connection cable or the cable supplied with the game device.



No.51755

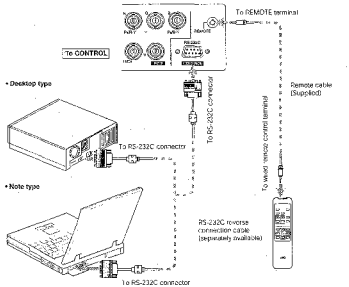
ENGLISH

DLA-G3010ZGU
DLA-G3010ZGE

Connecting to Devices which Control the Projector

Before connection, be sure to turn off both the projector and devices to be connected.

- Read thoroughly the manual that comes with each device to be connected.
- By connecting a computer to the RS-232C terminal, you can control the projector.
  - *Obtain connection cables as required. Use a reverse connection cable.*
  - *For details, refer to "RS-232C external control" on page 66.*
  - *For further details, consult your dealer or an authorized service center.*
- The supplied remote control can be used as a wired remote control. Use the supplied remote cable to connect the REMOTE terminal of the main unit with the wired remote control terminal of the remote control. (See page 50.)



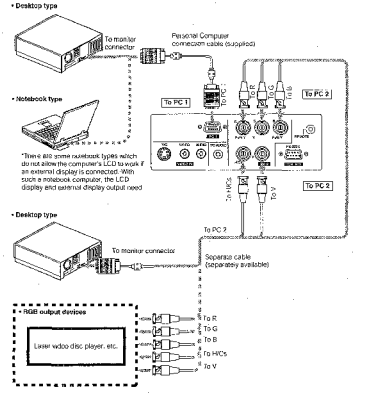
Connecting to Computer Devices

Before connection, be sure to turn off both the projector and computer devices.

- Read thoroughly the manual that comes with each device.

■ Connection to an IBM PC or IBM-compatible computer

- Use the supplied personal computer connection cable. Also, prepare cables required for connecting the devices connected.


• Desktop type
To monitor connector
Personal Computer connection cable (supplied)
• Notebook Type
To PC 1
To PC 2
*Some still some notebook types which do not allow the computer's LCD to work if an external display is connected. With such a notebook computer, the LCD display and external display output need
To H/CS
To V
To PC 2
• Desktop type
To PC 2
To monitor connector
Separate cable (separately available)
• RGB output devices
Laser video disc player, etc.
To R
To G
To B
To H/CS
To V

Notes

- When connecting an audio output terminal such as a computer sound source to the projector, connect to the PC AUDIO terminal using the separately available audio cable.
- When the PC2 (mini) terminal is used, "PC2 (BNC)" must be selected from the menu options. Refer to "Setting and Adjusting Other Functions (OPTIONS)" on page 50.

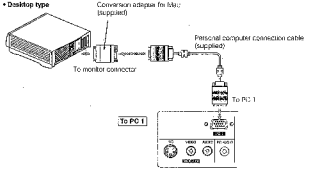
ENGLISH

Connecting to Computer Devices (Cont.)

Before connection, be sure to turn off both the projector and computer devices.
• Read thoroughly the manual that comes with each device.

■ Connection to Macintosh

• Use the supplied Personal computer connection cable and the supplied conversion adaptor for Mac.

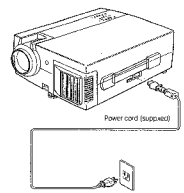


Notes:

• When connecting an audio output terminal such as a computer sound source to the projector, connect to the PC AUDIO terminal using the separately available audio cable.
• Other connections are the same as in the connection example for IBM PC or IBM compatible PCs.

Connecting the Power Cord

After all devices have been finished being connected, connect the supplied power cord. At this time, do not yet turn on the MAIN POWER switch.



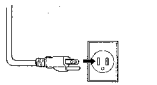
CAUTIONS

To prevent fire and electric shock, observe the following:

• When you do not use devices, pull out their power cords from wall outlets.
• Do not connect the devices with power cords other than those supplied.
• Do not use mains voltage other than the power voltage indicated.
• Do not scar, damage, or work on the power cords. Also, do not put a heavy object on, heat, or stretch the power cords, otherwise they may be damaged.
• Do not insert or pull out the plugs with a wet hand.

1 Insert the supplied power cord into the power input terminal of the projector.

2 Insert the main plug of the supplied power cord into a suitable wall outlet.

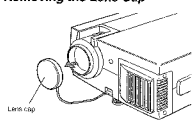


CAUTIONS

• Since the power requirement of the projector is high, insert the power plug directly into a wall outlet.
• Use the supplied power cord with the ferrite core only.
• Do not remove the ferrite core from the supplied power cord. Otherwise, there may be a possibility that a harmful interference occurs.

ENGLISH

Removing the Lens Cap



■ To use the projector, remove the lens cap.

** The lens cap has a string attached that is fixed to the projector.*
** Do not operate the projector while the lens cap is still on. The lens cap may be deformed by the heat.*

Be sure to fit lens cap to the lens when not in use.

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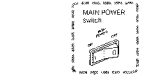
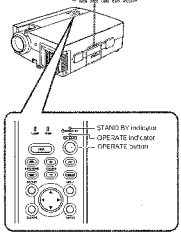
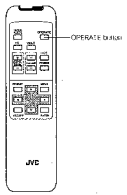
Basic Operations

■ Projector's buttons





■ Remote control unit



No.5755

The following describes the basic procedure for normal use of the projector.

1. Turning on the Power

1 Turn on the MAIN POWER switch.

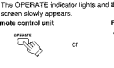
ON (|) : The main power turns on and the STAND BY indicator comes on.

Projector's indicator

2 Press the OPERATE button for one second or more.

- The OPERATE indicator lights and the projected screen slowly appears.

Remote control unit / Projector



Notes

- After the power is turned on, the image may be jumbled for a few seconds, but this is not a malfunction.
- When the light-source lamp is turned on it will slowly become brighter. It will take more than a minute for the light-source lamp brightness to reach a steady level.

■ Turning off the Power

1 Press the OPERATE button for one second or more.

- The STAND BY indicator changes to blinking, and the projector goes into cool-down mode. The cool-down mode will continue for approximately 90 seconds.

Remote control unit / Projector (blinking)

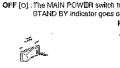
Note

- The OPERATE button will not work for approximately 1 minute from when the light-source lamp is turned on. Use the button after approximately 1 minute.

2 Turn off the MAIN POWER switch after the STAND BY indicator changes to steady on.

OFF (○) : The MAIN POWER switch turns off and the STAND BY indicator goes off.

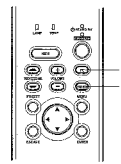
Projector



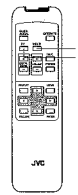
CAUTION

- Do not turn off the MAIN POWER switch during cool-down mode (the STAND BY indicator blinking). Turn it off after the STAND BY indicator becomes on (stand-by mode).

■ Projector's buttons



■ Remote control unit



■ Language display

The display languages of the menus, direct buttons (DIGITAL ZOOM, KEYSTONE, VOLUME, etc) and messages is set to "ENGLISH" when the projector is bought. The display language can be selected from the following 6 languages: "日本語 (Japanese)", "English (English)", "Deutsch (German)", "Español (Spanish)", "Italiano (Italian)" and "Français (French)". (See page 43.) However, some words (VIDEO, NTSC, Quick Alignment, etc) are only displayed in English.

2. Select the Input source to be Projected

Press the VIDEO button or the PC button to switch the input.

- Each time you press either button, the selected input changes as follows. The selected name appears on the top right of the image on the screen for five seconds. (Cyclist line display.)

When you press the VIDEO button:

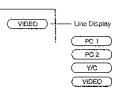
YPBPR ⇔ VIDEO

When you press the PC button:

PC1 ⇔ PC2

Remote control unit / Projector

[Screen display]



** To show the line display (YPBPR, VIDEO, PC1, or PC2) or not is selectable by the menu. Refer to "Setting and Adjusting Other Functions (OPTIONS)" on page 50.*

Notes

- When the VIDEO IN (YPBPR or VIDEO input) terminal input signal source is switched with the VIDEO button, it is necessary to reconnect the audio cable to the active device since the projector has only a single AUDIO input terminal.
- When the PC1 or PC2 input terminal signal source is switched with the PC button, it is necessary to reconnect the audio cable to the active device since the projector has only a single PC AUDIO input terminal.
- When no image signal is input to the selected input terminal, the message "No image signal is inputted." is displayed on the screen. (See page 60.)
- When the PC2 input terminal is used, "PC2 (BNC)" must be selected from the menu options. (See page 56.)

3. Adjust the Screen Size (Zoom Ring)

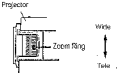
Adjust the screen size with the zoom ring of the lens block.

To enlarge the screen size (W side):

Turn the zoom ring counterclockwise viewing the lens from the front.

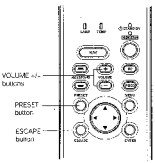
To reduce the screen size (T side):

Turn the zoom ring clockwise viewing the lens from the front.

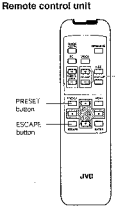


ENGLISH

■ Projector's buttons



■ Remote control unit

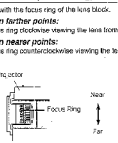


4. Adjust Focus (Focus Ring)

Adjust focus with the focus ring of the lens block.

To focus on farther points:
Turn the focus ring clockwise viewing the lens from the front.

To focus on nearer points:
Turn the focus ring counterclockwise viewing the lens from the front.



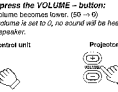
5. Adjusting Sound Volume

Adjust sound volume with the VOLUME +/- buttons. When the VOLUME + or – button is pressed, "Audio-Vol" appears on the screen together with the level bar and set value (0 to 50). When "15 sec." is displayed in the menu, "Audio-Vol" will appear in approximately 15 seconds.

When you press the VOLUME + button:
The sound volume becomes higher. (0 → 50)

When you press the VOLUME – button:
The sound volume becomes lower. (50 → 0)

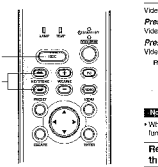
** When the volume is set to 0, no sound will be heard from the built-in speaker.*



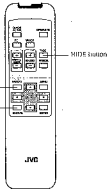
Notes

- When "Audio-Vol" is displayed on the screen, pressing the PRESET button resets the set value to "0".
- Press the ESCAPE button to immediately remove the volume display.

■ Projector's buttons



■ Remote control unit



Turning off Image and Sound (HIDE)

Video image and audio sound can be temporarily turned off.

Press the HIDE button once:
Video image and audio sound instantly turn off.

Press the HIDE button again:
Video image and audio sound come on again.

Note

- When the projected image input is changed, the HIDE function is canceled and the image and sound return.

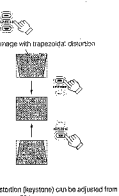
Removing the Trapezoidal Distortion of the Image

If the image projected on the screen is distorted in trapezoid form, correct it with the KEYSTONE buttons on the projector. When the KEYSTONE button is pressed, "Keystone" appears on the screen together with the level bar and set value (–80 to 120). When "15 sec." is displayed in the menu, "Keystone" will appear in approximately 15 seconds.

When you press the KEYSTONE ▬ button:
The trapezoid form is corrected as shown in the figure.

When you press the KEYSTONE ▰ button:
The top bottom inverted trapezoid form is corrected as shown in the figure.

** To cancel correction and restore the original screen, press the PRESET button. (Adjusted value: 0)*
** Press the ESCAPE button to immediately remove the keystone display.*



Notes

- The trapezoidal distortion (keystone) can be adjusted from the option menu. (See page 60.)
- The range of the trapezoidal distortion adjustment is approximately 20° in the vertical direction.
- Interference patterns may appear on the screen when adjusting the keystone. This is not a malfunction.

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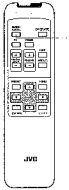
DLA-G3010ZGE

ENGLISH

■ Remote control unit



Quick Alignment Function (QUICK ALIGN.)

The Quick Alignment function automatically adjusts (sets) the screen settings of the image input from the PC1 or PC2 input terminals. This can only be performed from the remote control.

While projecting an image on the screen, press the QUICK ALIGN. button on the remote control.
Quick alignment is conducted to obtain best image.
"During the automatic alignment, "Quick Alignment" appears on the screen, and then disappears when the alignment is completed.

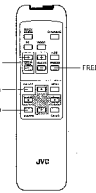
Remote control unit

[Screen display]

Notes

- This only works for the signals input from the PC1 or PC2 input terminals. It does not work for the signals input from the VIDEO IN terminal (VIDEO or Y/C input terminal).
- The quick alignment function is used to automatically adjust the "Brightness", "Contrast", "Horizontal and vertical position", "Phase" and "Tracking" of the projected image.
- When using the quick alignment function to automatically adjust the image, use a bright, still picture. It may not function correctly on a dark or motion picture. If the results obtained with the quick alignment function are not satisfactory, manually adjust the "Brightness", "Contrast", "Horizontal and vertical position", "Phase" and "Tracking" of the projected image.

■ Remote control unit



FREEZE message

FREEZE inhibit message

DIGITAL ZOOM inhibit message

Displaying a Still Picture (FREEZE)

While projecting an image, a still picture is obtained at any time by using the FREEZE button on the remote control.

When you press the FREEZE button:
"FREEZE" appears on the screen for a few seconds and then the still picture is shown on the screen. Refer to the FREEZE message shown on the left of this page.
** To forcibly clear "FREEZE", press the ESCAPE button.*

When you press the FREEZE button again.
The original image resumes.

Remote control unit

Notes

- During freezing, the picture sent from the signal source is lost.
- If any of the progressive buttons ("MENU", "QUICK ALIGN.", "KEYSTONE") are pressed while displaying a still picture, "FREEZE" is displayed on the screen.
- This function will not work with some signal sources (UXGA, etc). In this case, the FREEZE inhibit message appears for a few seconds, as shown on the left. To forcibly clear this message, press the ESCAPE button.

Zooming a Part of the Image (DIGITAL ZOOM +/–)

A part of the image being projected can be digitally magnified up to four times. When the DIGITAL ZOOM + or – button is pressed, "Digital zoom" appears on the screen together with the level bar and magnifying power (×1.0, ×1.2, ×1.4, ×1.6, ×2.0, ×2.5, ×3.2, ×4.0). When "15 sec." is displayed in this menu, "Digital zoom" will appear in approximately 15 seconds.

- To zoom up or zoom down, press the DIGITAL ZOOM + or – button on the remote control.

Remote control unit

Moving the zoomed image:
While "Digital zoom" appears on the screen, you can move the zoomed image with the cursor buttons ▲/▼/◄/► on the remote control.

▲:Upper part of the image will be displayed.
▼:Lower part of the image will be displayed.
◄:Left side part of the image will be displayed.
►:Right side part of the image will be displayed.

Notes

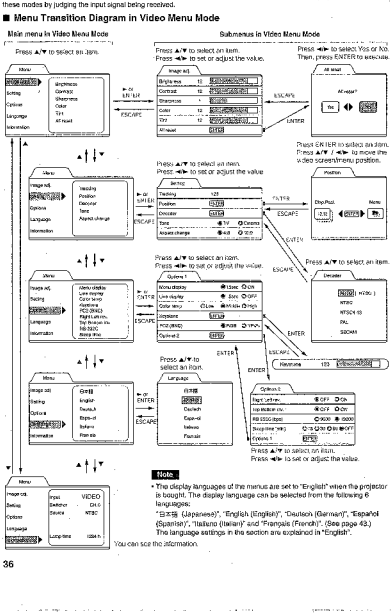
- This function will not work with some signal sources (UXGA, etc). In this case, the DIGITAL ZOOM inhibit message appears for a few seconds, as shown on the left. To forcibly clear this message, press the ESCAPE button.
- The quality of the zoomed image reduces in comparison with the original one.
- To return to the original size (×1.0) and original position, press the PRESET button while "Digital zoom" is displayed on the screen.

No.51755

Menu Operations

You can adjust picture quality, set functions, get information on the input video signal, etc. using the menus. From the following menu transition diagrams, you can see the overall menus and basic button operation in menu mode. Note that there are two menu modes, Video menu mode and PC menu mode. When the MENU button is pressed, the projector enters one of these modes by judging the input signal being received.

■ Menu Transition Diagram in Video Menu Mode


Main menu in Video Menu Mode
Submenus in Video Menu Mode
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.
Press ◄/► to select Yes or No. Then, press ENTER to execute.
Press ENTER to select an item.
Press ▲/▼ / ◄/► to move the video screen/menu position.
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.
Press ▲/▼ to select an item.
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.
Image adj.
Setup
Options 1
Options 2
Position
Decoder
Language
Information
Menu
ENTER
ESCAPE

Note

- The display languages of the menus are set to "English" when the projector is bought. The display language can be selected from the following 6 languages.
  "日本語 (Japanese)", "English (English)", "Deutsch (German)", "Español (Spanish)", "Italiano (Italian)" and "Français (French)". (See page 43.)
  The language settings in the section are explained in "English".

You can see the information.

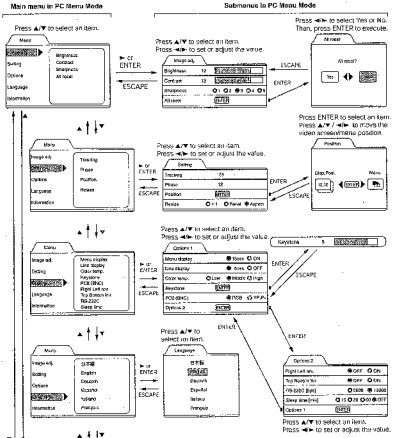
■ Quick Reference Guide for Video Menu Mode

Main Menu in Video Menu Mode (While receiving video-device-related signals)

- Image adj. → (Refer to page 45)
  - Brightness: Brightness of the video image being projected can be adjusted. (–30 to +30, 0*)
  - Contrast: Contrast of the video image being projected can be adjusted. (–30 to +30, 0*)
  - Sharpness: Sharpness of the video image being projected can be adjusted. (–5 to +5, 0*)
  - Color: Color density of the video image being projected can be adjusted. (–30 to +30, 0*)
  - Tint: Tint of the video image being projected can be adjusted. (–30 to +30, 0*)
  - All reset: Resets above items to the factory set values.
    - Yes / No
- Setting
  - Tracking: Normally, no adjustment is required. The lateral size and display area or video image can be adjusted. (–128 to +127) → (Refer to page 44)
  - Position: Video screen position and menu position can be adjusted. → (Refer to page 47)
    - Disp. Pos. / Menu
  - Decoder: Selectable color systems. Normally, set to AUTO. → (Refer to page 42)
    - AUTO* / NTSC / NTSC4.43 / PAL / SECAM
  - Tone: Image tone can be changed. TV*/ Cinema (Suitable for the cinema programs) → (Refer to page 46)
  - Aspect change: Selectable aspect ratio. 4:3* / 16:9 → (Refer to page 48)
- Options → (Refer to page 50)
  - Options 1
    - Menu display: 15sec* (Menu disappears in 15 seconds.) / ON (Menu stays on.)
    - Line display: 5sec* (Line display such as "VIDEO", "V/C", "PC1", or "PC2" appears on top right of the screen for 5 seconds when the VIDEO or PC button is pressed.) / OFF (Line display does not appear.)
    - Color temp.: Adjustable color temperature. Low / Middle* / High. Will be adjusted to correct reddish or bluish image.
    - Keystone: Press ENTER to enter the Keystone submenu.
      - Keystone: Adjust to correct the trapezoidal distortion of the projected image. (–80 to +128, 0*)
    - PC2 (BNC): RGB* or YPBPR. Set to RGB when a computer device with analog RGB, V, H/Cs signals is connected to the PC2 terminals. Set to YPBPR when a device with component signals (Y, B-Y, R-Y) or DTV-format signals (Y, PB, PR) are connected to the PC2 terminals.
    - Options 2: Press ENTER to enter the "Option 2" submenu.
      - Right Left rev.: OFF* / ON (Select for upside-down hanging on the ceiling.)
      - Top Bottom rev.: OFF* / ON (Select for upside-down hanging on the ceiling.)
      - RS-232C [bps]: Selectable baud rate (transmission speed). 9600 / 19200*
      - Sleep time [min]: Selectable sleep times. If no-signal condition continues for the period of selected time (Units: Minutes), the projector enters the stand-by mode. 15 / 30 / 60 / OFF*
      - Options 1: Press ENTER to return to the "Option 1" submenu.
  - Language: Language for on-screen display. → (Refer to page 43)
    - Japanese / English* / German / Spanish / Italian / French
- Information → (Refer to page 52)
  - Input: Shows the terminal name selected by the VIDEO or PC button. (V/C, VIDEO, or PC2)
  - Switcher: Has no meaning. This display currently has no meaning. ("CH.0" is usually displayed to indicate that it is not being used.)
  - Source: Shows the projected image's type of video signal.
  - Lamp time: Accumulated used hours of the light-source lamp.

*: Factory set value.

■ Menu Transition Diagram in PC Menu Mode



■ Quick Reference Guide for PC Menu Mode

Main Menu in PC Menu Mode (While receiving computer-related signals)

- Image adj. → (Refer to page 45)
  - Brightness: Brightness of the picture image being projected can be adjusted. (–30 to +30, 0*)
  - Contrast: Contrast of the picture image being projected can be adjusted. (–30 to +30, 0*)
  - Sharpness: Adjust the outline of letters etc. (1 / 2 / 3 / 4 / 5, 3*)
  - All reset: Resets above items to the factory set values.
    - Yes / No
- Setting
  - Tracking: The lateral size and display area of picture image can be adjusted. (–128 to +127)
    → (Refer to page 44)
  - Phase: Flickering or dim picture image can be adjusted. (0 to 31) → (Refer to page 44)
  - Position: Video screen position and menu position can be adjusted. → (Refer to page 47)
    - Disp. Posi. / Menu
  - Resize: The relationship between the number of pixels (resolution) and the screen can be selected. → (Refer to page 48)
    - "1:1": Picture image is projected with its original size.
    - Panel: Picture image is enlarged to the full size.
    - Aspect*: Picture image is enlarged while maintaining the original aspect ratio.
- Options → (Refer to page 50)
  - Options 1
    - Menu display: 15sec* (Menu disappears in 15 seconds.) / ON (Menu stays on.)
    - Line display: 5sec* (Line display such as "PC1" or "PC2" appears on top right of the screen for 5 seconds when the VIDEO or PC button is pressed.) / OFF (Line display does not appear.)
    - Color temp.: Adjustable color temperature. Low / Middle* / High. Will be adjusted to correct reddish or bluish image.
    - Keystone: Press ENTER to enter the Keystone submenu.
      - Keystone: Adjust to correct the trapezoidal distortion of the projected image. (–60 to +60, 0*)
    - PC2 (BNC): RGB* or YPbPr. Set to RGB when a computer device with analog RGB, V, H/Cs signals is connected to the PC2 terminals. Set to YPbPr when a device with component signals (Y, B-Y, R-Y) or DTV-format signals (Y, Pb, Pr) are connected to the PC2 terminals.
    - Options 2: Press ENTER to enter the "Option 2" submenu.
      - Right Left rev.: OFF* / ON (Select for upside-down hanging on the ceiling.)
      - Top Bottom inv.: OFF* / ON (Select for upside-down hanging on the ceiling.)
      - RS-232C (bps): Selectable baud rate (transmission speed). 9600 / 19200*
      - Sleep time (min): Selectable sleep times. If no-signal condition continues for the period of selected time (Unit: Minutes), the projector enters the stand-by mode. 15 / 30 / 60 / OFF*
    - Options 1: Press ENTER to return to the "Option 1" submenu.
- Language: Language for on-screen display. → (Refer to page 43)
  - Japanese / English* / German / Spanish / Italian / French
- Information → (Refer to page 52)
  - Input: Shows the terminal name selected by the PC button. (PC1or PC2)
  - Switcher: This display currently has no meaning. ("DVI" is usually displayed to indicate that it is not being used.)
  - Resolution: Shows the resolution of the input signal being received. (Horizontal × Vertical)
    It may not be displayed correctly with some input signals.
  - Frequency H: Shows the horizontal frequency of the input signal being received. (kHz)
  - Frequency V: Shows the vertical frequency of the input signal being received. (Hz)
  - Lamp time: Accumulated used hours of the light-source lamp.

*: Factory set value.

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Basic Menu Operation

When the MENU button is pressed, the projector enters Video or PC menu mode by responding to the input signal being received.

Video menu mode:
Enters this mode when video-device-related signals are input from the following devices.
- Video devices connected to the VIDEO IN (Y/C and VIDEO) terminals.
- A video device connected to the PC 2 terminals, which outputs component signals (Y, B-Y, R-Y) or DTV-format signals (Y, PB, PR).

PC menu mode:
Enters this mode when computer-related signals are input from the following devices.
- A computer connected to the PC 1 terminal.
- A computer connected to the PC 2 terminal, which outputs analog RGB, V, H/Cs signals.

1 Press the MENU button.

The main menu is displayed on the screen.

Remote control unit / Projector

2 Press the cursor button ▲ or ▼ to select an item in the main menu.

Remote control unit / Projector

3 Press the cursor button ► or the ENTER button to enter the submenu.

The submenu corresponding to the item selected in step 2 is displayed on the screen.

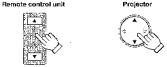
** When you selected "Information" in step 2, no submenu is available.*

Remote control unit / Projector

4 Press the cursor button ▲ or ▼ to select an item in the submenu.

When a "Language" has been selected in step 2, press to set the language.

Remote control unit / Projector



5 Press the cursor button ◄ or ► to set or adjust the value.

Remote control unit / Projector

When an item which has the "ENTER" message has been selected in step 4, press the ENTER button to move to the next submenu.
- All reset → (See page 48)
- Position → (See page 47)
- Decoder → (See page 49)
- Keystone → (See page 50)
- Options 1 → (See page 50)
- Options 2 → (See page 50)

To exit the main menu:
- While the main menu is displayed, press the MENU button.
- The main menu disappears and the original picture image resumes.

To exit the submenu:
- While the submenu is displayed, press the ESCAPE button.
- The menu returns to the previous menu.
- To exit the menu mode directly, press the MENU button.
- The submenu disappears and the original video image is restored.

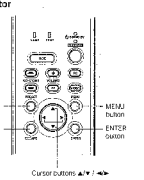
Basic Menu Operation (Cont.)

■ **Basic Button Functions in the Menu Mode**

Button	Function
MENU	Enters the main menu or exits the menu mode.
Cursor button ▲/▼	Selects an item in the menu. Pressing ▼ or ▲ will scroll the item in the menu.
Cursor button ◄/►	Sets or adjusts the value.
PRESET	If pressed while the keystone setting submenu is displayed, the value is set to "0".
ESCAPE	Returns to the previous menu.
ENTER	Used to enter the submenu from the main menu. Used to enter the next submenu if "ENTER" is displayed in the selected item.

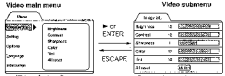
■ **Remote control unit**

■ **Projector**



■ **Video menu mode**

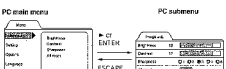
Video main menu / Video submenu



Press ▲/▼ to select an item.
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.

■ **PC menu mode**

PC main menu / PC submenu



Press ▲/▼ to select an item.
Press ▲/▼ to select an item.
Press ◄/► to set or adjust the value.

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Changing the Color System (Video Menu Mode Only)

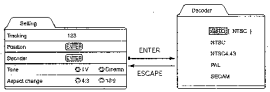
This function is available only in Video menu mode.
Normally, use the color system in AUTO. If operation in AUTO is unstable, such as color not being shown, set to a dedicated color system in accordance with the color system of the video signal being input.

1 Press the MENU button.
The main menu appears on the screen.

2 Select "Setting" with the cursor button ▲ or ▼, and press ► or the ENTER button.
The "Setting" submenu appears on the screen.

3 Select "Decoder" with the cursor button ▲ or ▼, and press the ENTER button.
The "Decoder" submenu appears on the screen.

Video submenus



4 Set the color system with the cursor button ▲ or ▼.

AUTO: Normally, set to "AUTO". (Factory set value)
The color system of a video signal being input is automatically identified and displayed in [ ].
In [ ], B/W (Black- & White), NTSC, NTSC4.43, PAL or SECAM will be displayed. (It is not always displayed.)
For example, AUTO [NTSC] shows that the NTSC signal is being received.
NTSC: Dedicated to NTSC.
NTSC4.43: Dedicated to NTSC4.43.
PAL: Dedicated to PAL.
SECAM: Dedicated to SECAM.

5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Changing the Language Display

The on-screen language is set to "English" when shipped from the factory. When you want to change to another language, set it as follows.

1 Press the MENU button.
The main menu appears on the screen.

2 Select "Language" with the cursor button ▲ or ▼, and press ► or the ENTER button.
The "Language" submenu appears on the screen.

日本語 : Japanese
English : English
Deutsch : German
Español : Spanish
Italiano : Italian
Français : French

3 Set the language with the cursor button ▲ or ▼.

4 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Memo

About language display
Some words in the menu and messages such as "Quick Alignment", "Keystone", "VIDEO" and "NTSC" are shown only in English.

ENGLISH

Adjusting Tracking / Phase

Normally, tracking and phase adjustments are automatically carried out when a video signal is input to the projector for the first time, or when the QUICK ALIGN. button on the remote control is pressed.
However, you can manually adjust the tracking and phase on the menu.

Both tracking and phase can be adjusted in PC menu mode. In Video menu mode, only tracking is adjustable, though this adjustment is not normally required.
If a wide stripe appears on the screen, adjust the lateral size of the picture image and the display area (tracking adjustment) so the stripe disappears.
Also, if text projected on the screen appears flickers or appears dim, adjust phase adjustment so it becomes clear.

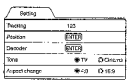
1 Press the MENU button.

The main menu appears on the screen.

2 Select "Setting" with the cursor button ▲ or ▼, and press ► or the ENTER button.

The "Setting" submenu appears on the screen.

Video submenu



PC submenu

3 Select "Tracking" or "Phase" with the cursor button ▲ or ▼.

"Phase" is shown only in PC submenu.

4 Adjust the tracking or phase with the cursor ◄ or ►.

Adjust the tracking and phase of the picture image being projected. To adjust the phase, first check for correct tracking adjustment.
**To adjust multiple items, repeat 3 and 4.*

Adjustment item	Button	Adjustment content
Tracking	◄ or ►	Toe picture image shrinks laterally (right-to-left) or extends laterally (left-to-right). (–128 ↔ +127)
Phase	◄ or ►	Set to a position where text appears clear. (PC menu mode only) (0 ↔ 31)

5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Note

• A dim image could be caused by inadEQuate adjustment of brightness and contrast. Before adjusting phase, make sure that brightness and contrast are correctly adjusted. To adjust them, refer to "Adjusting Picture Quality" on page 45.

Adjusting Picture Quality

In the "Image adj." submenu, adjust brightness, contrast, sharpness, etc. to obtain the desired picture quality. Note that the adjustment items differ in Video menu mode and PC menu mode.

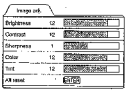
1 Press the MENU button.

The main menu appears on the screen.

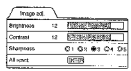
2 Select "Image adj." with the cursor button ▲ or ▼, and press ► or the ENTER button.

The "Image adj." submenu appears on the screen.

Video submenu



PC submenu



3 Select the item to be adjusted with the cursor button ▲ or ▼.

**"Color" and "Tint" are shown in Video submenu only.*

4 Make adjustment with the cursor ◄ or ►.

**To adjust multiple items, repeat 3 and 4.*

Adjustment item	Button	Adjustment content
Brightness	◄ or ►	Gets darker/brighter. (–30 ↔ 0* ↔ +30)
Contrast	◄ or ►	Gets lower/higher. (–30 ↔ 0* ↔ +30)
Sharpness	◄ or ►	• Gets softer/sharper. • Video menu mode: (–5 ↔ 0* ↔ +5) • PC menu mode: (1 ↔ 3* ↔ 5) **Note** • When in the PC menu mode, if the resize function in the PC submenu is set to "1:1", the image quality will not change even if the value is changed.
Color	◄ or ►	Gets softer/deeper. (–50 ↔ 0* ↔ +50) (Video menu mode only)
Tint	◄ or ►	Gets reddish/greenish. (–30 ↔ 0* ↔ +30) (Video menu mode only)
All reset	ENTER	Resets above items to the factory set values. How to operate is mentioned below (next page).

**: Factory set value*

(To be continued on the next page)

■ To perform All Reset

- In the Image adj. submenu, select "All reset" with the cursor button ▲ or ▼, and press the ENTER button. Then, the "All reset" submenu appears on the screen.
- Press the cursor button ◄ to select "Yes", and then press the ENTER button.
- All items in the "Image adj." submenu are reset to the factory set values and the menu returns to the previous one. To exit the "All reset" submenu without performing All reset, select "No" with the cursor button ► and, press the ENTER button.

5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Memo

In some adjustments, the level bar changes according to the set value. (The setting value is also displayed at the left of the level bar.)

Adjusting the Video Screen/Menu Position

The position of the video screen and the menu on the video screen can be adjusted. You can finely adjust the video screen position. The menu will move widely on the video screen.

1 Press the MENU button.

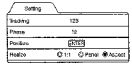
The main menu appears on the screen.

2 Select "Setting" with the cursor button ▲ or ▼, and press ► or the ENTER button.

The "Setting" submenu appears on the screen.

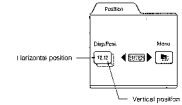
Video submenu

PC submenu



3 Select "Position" with the cursor button ▲ or ▼, and press the ENTER button.

The "Position" submenu appears on the screen.



4 Press the ENTER button to select "Disp.Posi." or "Menu".

Disp.Posi. (Display Position):The video screen position (display position) can be adjusted.
Menu:The menu position can be adjusted.

5 Press the cursor button ▲, ▼, ◄, or ► to move the video screen (display) or the menu.

**Repeat 4 and 5 to move both video screen (display) and menu positions.*

Adjustment item	Button	Adjustment content
Disp.Posi. - H	◄ or ►	The video screen moves to the left or right. (–30 ↔ +30)
Disp.Posi. - V	▲ or ▼	The video screen moves up or down. (–30 ↔ +30)
Menu - H	◄ or ►	The menu moves to the left or right. (Left, center*, right)
Menu - V	▲ or ▼	The menu moves up or down. (Top, center*, bottom)

** : Factory set value*

6 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

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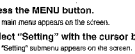
Changing the Image Tone/Aspect Ratio (Video Menu Mode Only)

The image tone (TV or Cinema) and the aspect ratio (4:3 or 16:9) are selectable in Video menu mode.

1 Press the MENU button.
The main menu appears on the screen.

2 Select "Setting" with the cursor button ▲ or ▼, and press ► or the ENTER button.
The "Setting" submenu appears on the screen.

Video submenu



3 Select "Tone" or "Aspect change" with the cursor button ▲ or ▼.

4 Adjust the image tone or aspect ratio with the cursor ◄ or ►.
**To adjust multiple items, repeat 3 and 4.*

Adjustment item	Button	Adjustment content
Tone	◄ or ►	The image tone projected on the screen can be changed. TV* : Suitable for projecting the video programs. Cinema : Suitable for projecting the cinema programs.
Aspect change	◄ or ►	Sets the vertical-to-horizontal ratio (4:3 or 16:9) of the video image projected. "4:3"* : The aspect ratio of the projected image becomes 4:3. Set it to 4:3 for video or NTSC, NTSC4.43, PAL, SECAM. "16:9" : The aspect ratio of projected image becomes 16:9. Set it to 16:9 for Hi-Vision devices (W-VHS VCR, etc.).

**: Factory set value*

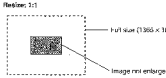
5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Changing the Image Size - Resize Function (PC Menu Mode Only)

The picture image projected can be selectable with the Resize function which is available only in PC menu mode. You can choose the video image size projected from the following. (Factory setting is "Aspect".)

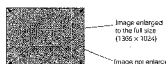
"1:1": The image is displayed at the input resolution. The picture image projected is not enlarged even if its number of pixels (resolution) is smaller than that of the projector's D-ILA element (1365 pixels × 1024 pixels).

Resize: 1:1



Panel: The picture image projected is virtually enlarged to the full size (1365 pixels × 1024 pixels). The horizontal and vertical enlargement ratio will differ depending on the original image and the image will be deformed.

Resize: Panel



Aspect: While maintaining the original aspect ratio, the video image projected is virtually enlarged until either the horizontal or vertical side reaches the full size (1365 pixels × 1024 pixels).

Resize: Aspect

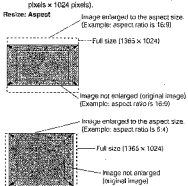
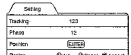


Image enlarged to the aspect size. (Example: aspect ratio is 16:9)
Full size (1365 × 1024)
Image not enlarged (original image) (Example: aspect ratio is 16:9)
Image enlarged to the aspect size. (Example: aspect ratio is 5:4)
Full size (1365 × 1024)
Image not enlarged (original image) (Example: aspect ratio is 5:4)

1 Press the MENU button.
The main menu appears on the screen.

2 Select "Setting" with the cursor button ▲ or ▼, and press ► or the ENTER button.
The "Setting" submenu appears on the screen.

PC submenu



3 Select "Resize" with the cursor button ▲ or ▼.

4 Choose "1:1", "Panel", or "Aspect" with the cursor button ◄ or ►.

5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

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Setting and Adjusting Other Functions (OPTIONS)

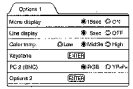
Various functions are provided as shown in the "Options 1" and "Options 2" submenus.
You can set or adjust each function, as required.

1 Press the MENU button.

The main menu appears on the screen.

2 Select "Options" with the cursor button ▲ or ▼, and press ► or the ENTER button.

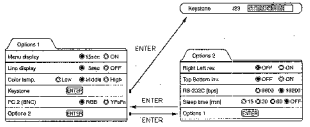
The "Options 1" submenu appears on the screen.



3 Select the item to be adjusted with the cursor button ▲ or ▼.

4 Make adjustment with the cursor ◄ or ►.

- While the keystone item is selected, press the ENTER button to display the "Keystone" submenu.
- To enter the "Options 2" submenu, select "Options 2" with the cursor button ▲ or ▼, and press the ENTER button.
- To return to the "Options 1" submenu from the "Options 2" submenu, select "Options 1" with the cursor button ▲ or ▼, and press the ENTER button.



*To adjust multiple items, repeat 3 to 4.
To reset the keystone (trapezoidal distortion of the picture image) to the original setting, press the PRESET button when the "Keystone" submenu appears on the screen.

Adjustment item	Button	Adjustment content
Menu display	◄ or ►	Sets whether to clear the menu display automatically or not. 10sec* : Clears the display automatically in about 10 seconds. ON : Does not automatically clear the menu display.
Line display	◄ or ►	Sets whether to show the line display (YC, VIDEO, PC1, or PC2) on top right of the screen or not when the VIDEO or PC button is pressed. 5sec* : Shows the line display for about 5 seconds. OFF : Does not show the line display.
Color temp.	◄ or ►	Sets the color temperature of the image being projected. Make adjustment when the image becomes reddish or bluish. Low : Color temperature decreases (image becoming reddish). Middle* : Results in middle color temperature. High : Color temperature increases (image becoming bluish).
Keystone	ENTER	Press the ENTER button to enter the keystone submenu. In the keystone submenu, press ◄ or ► to correct trapezoidal distortion of the projected image. (-80 ↔ 0* ↔ +128) To reset the keystone (trapezoidal distortion of the picture image) to the original setting (factory set value: 0), press the PRESET button when the "Keystone" submenu appears on the screen. To exit the keystone submenu, press the ESCAPE button.
PC2 (BNC)	◄ or ►	Sets the input signal source according to the device connected to the PC 2 terminals. However, the input will be RGB irrespective of the PC signal setting. RGB* : For a device with analog RGB, V, H/Cs signals YPbPr : For a device with component (Y, B-Y, R-Y) or DTV-format (Y, Pb, Pr) signals
Right Left rev.	◄ or ►	Reverses image right-to-left. OFF* : For the front method ON : For upside-down hanging from the ceiling.
Top Bottom inv.	◄ or ►	Inverses image upside-down. OFF* : For normal setup. ON : For upside-down hanging from the ceiling.
RS-232C [bps]	◄ or ►	Sets the baud rate for transmission. 9600 : 9600 bps 19200* : 19200 bps
Sleep time [min]	◄ or ►	Sets the length of sleep time which automatically brings the projector into stand-by state. You can select one of the sleep times: 15, 30, 60 and 0 (OFF) minutes.

Factory set value

5 Press the ESCAPE button to return to the previous menu or press the MENU button to exit the menu mode.

Note

- Refer to "Removing the Trapezoidal Distortion of the Image" on page 33 for more details about adjusting the keystone.

CAUTION

- Correctly set the "PC2 (BNC)" according to the device connected to the PC2 terminals. However, when the PC signal is input, RGB input is used irrespective of which setting (YPbPr) is made.

ENGLISH

Getting Information

You can get information on the input signal, accumulated used hours of light-source lamp, etc.

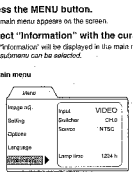
1 Press the MENU button.

The main menu appears on the screen.

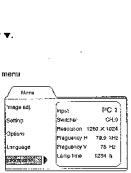
2 Select "Information" with the cursor button ▲ or ▼.

The "Information" will be displayed in the main menu.
**No submenu can be selected.*

Video main menu



PC main menu



Input: Shows the terminal name selected by the VIDEO or PC button. (Y/C or VIDEO, or PC1 or PC2)
Switcher: This display currently has no meaning. This is reserved for future use. ("CH.0" is usually displayed to indicate that it is not being used.)
Source: Shows the projected image's type of video signal. (Video menu mode)
Resolution: Shows the resolution of the video signal being received. (PC menu mode)
It may not be displayed correctly with some input signals.
Frequency H: Shows the horizontal frequency of the video signal being received. (PC menu mode)
Frequency V: Shows the vertical frequency of the video signal being received. (PC menu mode)
Lamp time: Accumulated used hours of the light-source lamp.

3 Press the MENU button to exit the menu mode.

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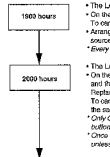
Replacing the Light-Source Lamp

The light-source lamp has a service life of approximately 2000 hours.
When the light-source lamp approaches the end of its service life, degradation progresses rapidly. The LAMP indicator and the message on the screen warn you that replacement of the lamp is required, as follows:

Accumulated used hours of the light-source lamp



- The LAMP indicator lights up on the projector.
- On the screen, "Lamp replacement" appears in red. To cancel this message, press the ESCAPE button.
- Arrange for a new light-source lamp or replace the light-source lamp a little earlier.
- *Every time the projector is turned on, the message appears.*

- The LAMP indicator blinks on the projector.
- On the screen, "Warning Lamp replacement" appears in red and the word "Warning" blinks. Replace the light-source lamp. To cancel this message, press the ESCAPE button. However, the same message will appear every one hour.
- *Only OPERATE button to stop the projector and the ESCAPE button are operative.*
- *Once the projector is turned off, the projector does not turn on unless the light-source lamp is replaced with new one.*

- The projector is forcibly shut off.
- *The projector does not turn on unless the light-source lamp is replaced with new one.*

Purchase a new light-source lamps (Part No.: BHL5005-SG) from the authorized dealer where you purchased the projector, or consult the Service Center.

CAUTIONS

- If the projector is set up in a constricted place which is unsuitable for work, and if you perform replacement work there, this could cause injury. Move the projector to a place large enough for work, and then replace the light-source lamp.
- Use a genuine product for the light-source lamp. If you use other than a genuine product, this could cause a malfunction. Also, never use an old light-source lamp. This could cause marked degradation in performance or explode, possibly causing the projector to malfunction or broken pieces to injure you.
- Do not replace the light-source lamp immediately after the projector has been used. The temperature of the light-source lamp is still high and could cause a burn. Allow a cooling period of one hour or more before performing replacement.
- Before starting light-source lamp replacement work, turn off the MAIN POWER switch, and disconnect the power cord from the wall outlet. If you perform the replacement work with the power cord connected, this could cause injury or electric shock.
- The light-source lamp used in this projector is a high pressure mercury lamp. Be careful when disposing of the light-source lamp. If anything is unclear, please consult your dealer.

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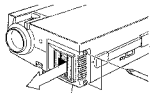
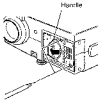
■ Be sure that the power cord is unplugged from the wall outlet

1 Loose the two screws and detach the light-source lamp cover.



Light-source lamp Cover

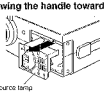
2 Loosen the two screws and open the handle.



Memo

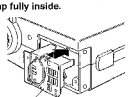
The screws are fitted so that they do not come off the light-source lamp cover.

3 Carefully remove the light-source lamp by drawing the handle toward you.



Light-source lamp

4 Carefully insert the new light-source lamp fully inside.

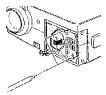


Light-source lamp

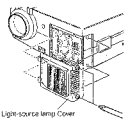
CAUTION

- Do not touch the glass surface of the light-source lamp directly with your hand as well as stacking it. If you touch with a bare hand, oils and other substances on your hand may adhere to the lamp, possibly preventing it from performing as specified and therefore giving a shortened lamp life, a darkened screen, etc. To handle a new light-source lamp, hold it by the plastic part. Never touch the metal part or the front glass surface.

5 Close the handle, and fasten the two screws.



6 Attach the light-source lamp cover with the two screws.



Light-source lamp Cover

CAUTION

- Be sure that the light-source lamp cover is correctly seated in place. Otherwise, the light-source lamp may overheat abnormally, resulting in a malfunction.

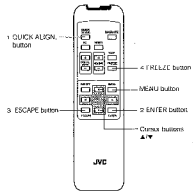
7 Reset the lamp use time.

Perform "Resetting the Lamp Use Time" on page 55.

■ Resetting the Lamp Use Time

After replacing with a new light-source lamp, reset the lamp-time counter inside the projector to clear the accumulated lamp time to zero (0). After resetting, a new count will start for the new light-source lamp.

■ Remote control unit



1 Turn on the MAIN POWER switch to go into stand-by mode.

In stand-by mode, the STAND BY indicator on the projector lights up.

2 Press the following buttons on the remote control, sequentially.

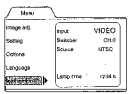
1. **Momentary press the QUICK ALIGN. button.**
2. **Momentary press the ENTER button.**
3. **Momentary press the ESCAPE button.**
4. **Press and hold the FREEZE button for two seconds or more.**

** During this sequence, the STAND BY and OPERATE indicators alternately blink about every approx. 3 seconds. After completion of the sequence, the STAND BY indicator alone stays on.*

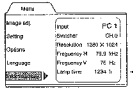
** To check the lamp time on the menu, press the MENU button and select "Information" with the cursor button ▲ or ▼.*

The lamp use time is indicated in the item "Lamp time".

Video main menu



PC main menu



CAUTION

- Reset the lamp use time only when you have replaced with a new light-source lamp. Never reset it during lamp life, otherwise the replacement time may become unclear, and lead to degraded performance or lamp explosion.

Cleaning and Replacing the Filter Cover

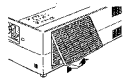
Clean the filter of the filter cover regularly. If the filter is heavily stained and does not clean, or if it is damaged, replace the filter with a new filter cover. Otherwise, dirt may get inside and appear on the screen, preventing you from fully enjoying the video image fully. If dirt gets inside or if you need information about the filter, consult authorized dealer where you purchased the projector or the nearest Service Center.

1 Turn off the MAIN POWER switch.

After the projector goes into stand-by state with the STAND BY indicator on, turn off the MAIN POWER switch and pull out the power cord from the projector and the wall outlet.

2 Remove the filter cover.

Open the filter cover by pulling the knob.



Note

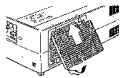
- If the filter is clogged with dirt, etc., the projector goes into an warning state (the OPERATE and STAND BY indicator blink, etc.). Therefour regularly, clean the filter. For the warning indication, refer to page 59.

3 Clean the filter of the filter cover.

Clean the filter with a neutral detergent, wash it in water, and then dry it in the shade.

4 Reinstall the filter cover.

Engage the two claws of the filter cover with the holes in the projector as shown in the figure and close the filter cover.



Notes

- Install the filter cover correctly. Otherwise, the projector does not operate. (Goes into an warning state (For the warning indication, refer to page 59).)
- If the filter cover's claws (in particular the claw which is hidden behind the filter cover knob) are damaged, the projector may not operate. Then, replace with a new filter cover.

CAUTIONS

- Put on rubber gloves when using neutral detergent.
- After you have washed the filter in water, make sure the filter is completely dry before reinstalling it, otherwise an electric shock or malfunction could occur.
- Do not clean the filter using a vacuum cleaner. Since the filter is soft, it may be sucked into the vacuum cleaner or damaged.

Troubleshooting

Solutions to common problems related to your projector are described here. If none of the solutions presented here solves the problem, unplug the projector and consult an authorized dealer or Service Center.

Symptom	Probable cause	Corrective action	Page
Power is not supplied.	• Is the power cord disconnected?	• Insert the power cord (plug) firmly.	29
	• Is the MAIN POWER switch turned on?	• Turn on the MAIN POWER switch.	30
	• Is the light-source lamp cover closed correctly?	• Turn off the MAIN POWER switch, close the light-source lamp cover correctly, and turn on the MAIN POWER switch again.	6, 30, 54
	• Is the filter cover closed correctly?	• Turn off the MAIN POWER switch, fit the filter cover correctly, and turn on the MAIN POWER switch again.	7, 39, 56
	• Has the lamp life expired? (Has the lamp use time reached 2000 hours?)	• Turn off the MAIN POWER switch, replace with a new light-source lamp, and turn on the MAIN POWER switch. Reset the lamp use time after replacing with a new lamp.	30, 53, 55
Light is not emitted, or light level is low.	• Is the lens cap removed?	• Remove the lens cap.	29
	• Is the lamp life near its end?	• Check the lamp use time on the menu, and if the lamp life is near its end, arrange for a replacement lamp, or replace a little earlier.	52, 53
With power on, operation starts but stops in a few minutes.	• Is the air intakes or exhaust area blocked?	• Turn off the MAIN POWER switch, remove any blocking objects, and turn on the MAIN POWER switch again.	6, 7, 30
Video image does not appear, or audio sound does not occur.	• Is the correct input selected?	• Select the correct input with the VIDEO and PC buttons.	8, 11, 12
	• Are devices connected correctly?	• Connect devices correctly.	10, 21
	• Are signals being supplied from the connected devices?	• Set connected devices correctly.	–
	• Are input signals (scanning frequency, etc.) appropriate?	• Check if the signal is appropriate (scanning frequency, etc.) and input the appropriate signal.	21, 22
	• Is the correct color system selected?	• Set the color system to AUTO or to the correct dedicated color system.	42
	• Is brightness adjusted correctly?	• Adjust brightness on the menu.	45
	• Is volume set at minimum?	• Adjust volume with the VOLUME +/– buttons.	9, 11, 33
	• Are video and audio turned off by pressing the **HIDE** button?	• Press the HIDE button to turn video and audio on.	9, 11, 33
Video image dims.	• Is focus adjusted correctly?	• Adjust focus with the focus ring of the lens block.	6, 26
	• Is distance too short or too long?	• Set the projector at the correct distance.	17
	• Are Tracking and Phase adjusted correctly?	• If satisfactory results are not obtained by pressing the QUICK ALIGN. button to conduct quick alignment, adjust Tracking and Phase on the menu.	12, 34, 44
Video image is abnormally dark or bright.	• Is picture quality (Brightness, etc.) adjusted correctly?	• Adjust picture quality on the menu.	45
Video image freezes.	• Was the FREEZE button on the remote control pressed?	• Press the FREEZE button to release freezing.	11, 35
A part of image is magnified.	• Was the DIGITAL ZOOM + button on the remote control pressed?	• Press the PRESET button to restore the original video screen.	12, 35

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Symptom	Probable cause	Corrective action	Page
Color is poor or unstable.	• Is picture quality (color density, etc.) adjusted correctly?	• Adjust picture quality on the menu.	45
	• Is the correct color system selected?	• Set the color system to AUTO or to the correct dedicated color system.	42
	• Are signals (scanning frequency, etc.) of the connected devices appropriate?	• Check if the signal is appropriate (scanning frequency, etc.), and input the appropriate signal.	21
	• Is the PC2 input terminal being used?	• When the PC2 input terminal is being use, "PC 2(BNC)" must be selected from the menu options. Set it correctly with the input signal.	10, 50
The upper part of the video image bows or distorts.	• While computer system signal is input, isn't a sync signal for composite sync (Cs) or G on sync being input?	• Input separate sync signals for vertical sync (V) and horizontal sync (H) signals.	10, 27
	• Isn't signal with much jitter or slow distortion being input from a video deck?	• Input signals with little jitter or distortion. Use a TBC or a device with a built-in TBC.	–
Video image and audio sound suddenly go out.	• Are video picture and audio turned off by pressing the HIDE button?	• Turn on video picture and audio by pressing the HIDE button.	9, 11, 33
Remote control unit does not work.	• Are batteries installed correctly?	• Match the polarities of batteries correctly (+ to + and – to –).	13
	• Are batteries exhausted?	• Replace with new batteries.	13
	• Is there a shielding object between the remote control unit and the remote sensor?	• Remove any shielding objects.	19
	• Is the distance too long?	• Use the remote control unit at a nearer point.	19
	• Is either side of remote cable disconnected?	• Firmly insert the remote cable when using the remote control unit as the wired one.	20

** This device uses a computer. External noise may cause it to malfunction. If this happens, turn the power off, remove the electric plug from the wall outlet. Then insert the electric plug back into the wall outlet, turn the power back on and check the operation.*

■ When warning indication is shown by the blinking indicators:

The warning status will be notified by the combination lighting of the projector's indicators.
For the warning contents and the action to be taken, refer to "Warning Indicator" on page 59.

■ Maintenance

• Stains on the cabinet
These should be wiped off with a soft cloth. If the cabinet is heavily stained, wipe it with a cloth soaked in water-diluted neutral detergent and wring well, then wipe clean with a dry cloth.
• Since the cabinet may deteriorate in quality, become damaged, or show paint peeled, note the following.
– Do not wipe with rough cloth.
– Do not wipe vigorously.
– Do not wipe with thinner or benzene.
– Do not apply any volatile substance such as insecticides.
– Do not allow any rubber or vinyl article to remain in contact with the cabinet for a long time.
• Stains on the lens
These should be cleaned off with commercially available lens blowers or lens cleaning paper (for cleaning glasses and cameras).
Do not use liquid cleaning agents. This could cause the surface coating to be removed.
Do not rub, scratch or hit the lens as its surface is prone to damage.

Warning Indication

If something abnormal has occurred with the projector, the warning status will be indicated by the combination of lighting the indicators on the control panel as shown in the following table. Then, the projector automatically stops projection and runs the cooling fan for about 60 seconds.

Warning indication table:

No.	Indicator				Warning content
	LAMP	TEMP	STAND BY	OPERATE	
1	Blink		Blink		The light-source lamp does not light and projection is not made.
2	Blink			Blink	The light-source lamp has suddenly gone off during projecting an image.
3	Blink	Blink			Circuit operation is abnormal.
4			Blink	Blink	The filter cover is displaced.
5		Blink			The internal temperature is too high.
6		Blink	Blink		The temperature at the air inlets has risen abnormally high.
7	Blink	Blink	Blink	Blink	The cooling fan has stopped (locked).

** For individual indicator lighting, refer to page 53.*

■ Action to be taken for warning indication

Stopping the projector:
After the cooling fan has stopped, take the following action.

No. 1 : Press the OPERATE button for one second or more to turn on the projector for retrying.
No. 2 : If a shock is given to the projector, the light-source lamp goes off. Press the OPERATE button for one second or more to turn on the projector for retrying.
No. 3 : Press the OPERATE button for one second or more to turn on the projector for retrying.

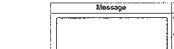
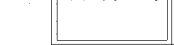
Nos. 4-7 : Follow the next steps.
1. Turn off the MAIN POWER switch and unplug the power cord from the wall outlet.
2. Take an action according to the number.

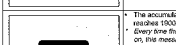
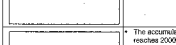
No. 4 : Set the filter cover in place. Then, leave the projector until it cools down.
No. 5 : Check that nothing is blocking the air inlets, and wait until the inside cools down.
No. 6 : Check the ambient temperature. If it is normal, leave the projector until it cools down.
No. 7 : Leave the projector until it cools down.
3. Plug in the power cord again, turn on the MAIN POWER switch, and press the OPERATE button for one second or more to turn on the projector for retrying.

Retrying operation:
Plug in the power cord again and operate the projector.
If the same warning indication is observed again, after the cooling fan has stopped, turn off the MAIN POWER switch, unplug the power cord, and call your dealer for repair.

Warning Messages

The following shows the warning messages that can be displayed on the screen. When a warning message is displayed, take the corrective action described here.

Message	Cause	Corrective action	Page
	• No device is connected to the input terminal. • The terminal is connected but no signal is output from the connected device. • *The selected input mode (input terminal) name is shown in the first line of the message.*	• Connect a device to the selected terminal. • Operate the connected device and output a signal.	8, 10, 23, 31
	• The frequency of the input video signal is out of range.	• Input the video signals whose frequency is within the projector's specifications.	21, 22, 62
	• Though the frequency of the input video signal is within the acceptable range, other items such as resolution are out of the projector's specifications.	• Input the video signals that satisfies the projector's specifications.	21, 22, 62
	• When the FREEZE button is pressed, this message appears for a few seconds. • When a button not acceptable is pressed during freezing, this message appears for a few seconds to notify that the image is being frozen.	• To release freezing, press the FREEZE button on the remote control.	11, 35
	• When the FREEZE button is pressed for the video signals that cannot be frozen (UXGA, etc.), this message appears for a few seconds to notify that the image cannot be frozen. • *To forcibly clear the message, press the ESCAPE button.*	• Freeze function does not work for the inputted video signals. To use this function, input the video signals that can be frozen.	11, 35

Message	Cause	Corrective action	Page
	• When the DIGITAL ZOOM button is pressed for the video signals that cannot be zoomed (UXGA, etc.), this message appears for a few seconds to notify that the image cannot be digitally zoomed. • *To forcibly clear the message, press the ESCAPE button.*	• Digital-zoom function does not work for the inputted video signals. To use this function, input the video signals that can be digitally zoomed.	12, 35
	• The accumulated lamp use time reaches 1900 hours. • *Every time the projector is turned on, this message appears on the screen.*	• Press the ESCAPE button to clear the message. (This display can be cleared with the MENU button or other buttons.) • Arrange for a new light-source lamp or replace the light-source lamp a little earlier.	8, 11, 12, 52, 53
	• The accumulated lamp use time reaches 2000 hours. The word "Warning" blinks. • *The message can be cleared by pressing the ESCAPE button. However, the same message will appear every one hour.* • *Once the projector is turned off, the projector does not turn on unless the light-source lamp is replaced with new one.* • *When the accumulated lamp use time reaches 2010 hours, the projector is forcibly shut off.*	• Replace the light-source lamp and reset the lamp use time.	52, 53, 54, 55

Memo

The message display language corresponds to the menu display language setting. This is set to "English (English)" when the projector is bought. The display language can be selected from 6 languages. (See page 43.) However, the input mode (PC1, PC2,VID, VIDEO) and button indications (FREEZE, D.ZOOM, ESCAPE) are only displayed in English irrespective of the display language setting.
The language settings in the section are explained in "English".

No.51755

DLA-G3010ZGU
DLA-G3010ZGE

Specifications

■ Optical mechanism system

• Projection method	D-ILA™ (Direct Drive Image Light Amplifier) method (Reflective-type active-matrix method)
• D-ILA™ device	0.9" (2.3 cm) measured diagonally (1365 pixels × 1024 pixels) × 3 (Total number of pixels : 4,193,280)
• Projecting lens	× 1.3 zoom lens (1.9:1 – 2.6:1) (manual zooming and focusing)
• Screen size	Approx. 42" (107 cm) – Approx. 200" (508 cm) (recommended) measured diagonally (with aspect ratio : 4:3)
• Projection distance	Approx. 6.56 ft (Approx. 2 m) – Aporox. 32.81 ft (Approx. 10 m)
• Light-source lamp	200W UHP (Ultra High Pressure Mercury) lamp

■ Electrical system

• Color system	NTSC, NTSC4.43, PAL, SECAM (Automatic switching / manual switching)
• Resolution	1365 dots × 1024 dots (S-XGA full resolution, during RGB input) 1000 TV lines (Horizontal resolution, aspect ratio 4 : 3, during video input)
• Scanning frequency	Horizontal frequency : 15 kHz – 100 kHz Vertical frequency : 50 Hz – 80 Hz
• Audio power output	1 W (monaural), 1-⅜" (4 cm) round type micro-speaker × 1

■ Input terminals

[VIDEO IN]

• Y/C	1-line, mini-DIN 4 pin × 1 (for S-video)
• VIDEO	1-line, RCA pin × 1 (for composite video)
• AUDIO	1-line, RCA pin × 1 (for Y/C or VIDEO IN)

[PC 1]

• R, G, B, H, V	1-line, D-sub 3-row 15 pin × 1 (for computer)

[PC 2]

	1-line, BNC × 5 (for computer, DTV or video)
• Y, B_Y, R_Y	Component (Y, B_Y, R_Y) signal
• Y, P_B, P_R	DTV-format (Y, P_B, P_R) signal
• R, B, G	Analog RGB signal
• H/C_S, V	Horizontal (H) sync/composite (C_S) sync, Vertical (V) sync signal
• PC AUDIO	1-line, mini-jack × 1 (for PC 1 or PC 2)

[CONTROL]

• RS-232C	1-line, D-sub 9-pin × 1 * *RS-232C-interface specified control terminal for controlling this projector with a personal computer.*
• REMOTE	1-line, stereo mini-jack × 1 * *Remote terminal for connecting with the remote control unit.*

■ General

• Power requirements	100 V – 240 V AC, 50 Hz/60 Hz
• Power consumption	2.9 A (100V AC) – 1.2 A (240V AC)
• Allowable operation temperature	41°F to 95°F (+ 5°C to + 35°C)
• Allowable relative humidity	20% to 80% (no condensation)
• Allowable storage temperature	14°F to 140°F (– 10°C to + 60°C)
• Dimensions	Approx. 11-½" × 5-¼" × 14-⅞" (Approx. 290 mm × 132 mm × 383 mm) [Carrying band, Excluding protrusions] (Width × Height × Depth)
• Weight	Approx. 13.2 lbs. (Approx. 6 kg)
• Accessories	(Refer to page 5.)

** Design and specifications are subject to change without notice.*
** D-ILA devices are manufactured with a very high-precision technology, allowing 99.99% of the pixels to be effective. Only 0.01% or less of the pixels are missing or always on.*
** For easy understanding, pictures and illustrations maybe emphasized, composed or have omissions and may be more or less different from actual products.*
** TRADEMARKS*
D-ILA is a trademark of Victor Company of Japan, Limited.
IBM and IBM PC are registered trademarks of International Business Machines Corporation. Macintosh is a registered trademarks of Apple Computer, Inc.
All other product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.

ENGLISH

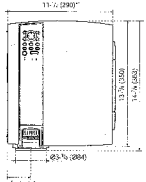
No. 51755

Outside dimensions

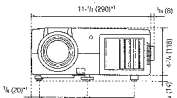
■ Top

Unit: inch (mm)

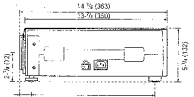
*1: Protrusion excluded



■ Front



■ Side



Pin assignment (Specifications for terminals)

■ Y/C terminal

Pin number	Signal name
1	GND (Y)
2	GND (C)
3	Y
4	C

■ RS-232C terminal

Pin number	Signal name	Pin number	Signal name
1	N/C	6	N/C
2	RD	7	N/C
3	TD	8	N/C
4	N/C	9	N/C
5	GND		

■ PC1 terminal

Pin number	Signal name	Pin number	Signal name
1	Red	9	N/C
2	Green	10	GND (SYNC)
3	Blue	11	GND
4	N/C	12	N/C
5	N/C	13	H.SYNC
6	GND (Red)	14	V.SYNC
7	GND (Green)	15	N/C
8	GND (Blue)		

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DLA-G3010ZGU
DLA-G3010ZGE

■ RS-232C external control

By connecting a computer to the RS-232C terminal, you can control the projector. Use a reverse connection cable as the RS-232C connection cable.
The commands to control the projector and the response data against the received commands are explained here.
For further information, please consult the dealer where you purchased your projector or consult the Service Center.

1. Communication Specifications

The communication specifications are as follows:

Baud rate	9600bps / 19200bps*
Data length	8 bits
Parity	None
Stop bit	1 bit
Flow control	None

** Factory set value. To change the value, refer to "Setting and Adjusting Other Functions (OPTION5)" on page 60.*

2. Command Format

2-1. Command data format (from the computer to the projector)

When sending a control command, use the following data format.

Header | ID | SP | Command | SP | Parameter | CR

Header: Designates the head of data and the kind of data.
"*" (2Ah): Control command to the projector
"?" (2Fh): Query to the projector (Asking command)
ID: "1" (fixed)
SP: Designates the delimiter for ID, Command, and Parameter. (20h)
CR: Designates the terminal of the data. (0Dh)
**] is not necessary when Asking command.*

2-2. Response data format (from the projector to the computer)

Upon executing the received control command, the projector sends back the following response data to the computer.

Header | ID | SP | Normal Termination Status | SP | Parameter | CR

Header: Designates the head of data.
"@" (40h): Follows data from the projector.
ID: "1" (fixed)
SP: Designates the delimiter for ID, Command, and Parameter (20h)
Normal Termination Status: "0" (30h)
CR: Designates the terminal of the data (0Dh)

2-3 Parameters used for the data format

The following three kinds of parameters are prepared for the control command and response data.

(1) Numeric value
Designates the 2-byte hexadecimal value with the sign as the 4-digit (byte) characters.
Designation allowable range: "8000" to "7FFF"

(2) ON/OFF
Designates the status (ON/OFF) of the projector, such as POWER and HIDE.

Character	Hex.	Meaning
"0"	30	OFF
"1"	31	ON

(3) Special parameters
Input switching parameters:

Character	Hex.	Meaning
"0"	30	Y/C
"1"	31	VIDEO
"2"	32	PC1
"3"	33	PC2

Operation mode parameters:

Character	Hex.	Meaning
"0000"	30h, 30h, 30h, 30h	Stand-by mode
"0001"	30h, 30h, 30h, 31h	Power-on mode
"0002"	30h, 30h, 30h, 32h	Cool-down mode
"0004"	30h, 30h, 30h, 34h	Warning mode

3. Control command table

The control commands that can be sent from the computer are as follows:

Function	Command	Asking		Kind of data		
		Power ON	ELSE	Numeric Value	ON/OFF	Special Data
OPERATE	U0F	–	–	–	✓	–
HIDE	U00	✓	–	–	✓	–
Right Left rev.	U17	✓	–	–	✓	–
Top Bottom rev.	U18	✓	–	–	✓	–
Keystone	U40	✓	–	✓	–	–
Input	U1A	✓		–	–	Y/C, VIDEO, PC1, PC2
Operation mode	Z03	✓	✓	–	–	Stand-by, Power-on, Cool-down, Warning

** Keystone: Numeric value can range from "FF80" to "0080".*
** Operation mode: Only Asking command is possible*

P6 – P67 contents of DLA-G3010ZGE "INSTRUCTIONS" is same as DLA-G3010ZGU "INSTRUCTIONS". Refer to P6 – P67 of DLA-G3010ZGU "INSTRUCTIONS"

DLA-G3010ZGU
DLA-G3010ZGE

OPERATING INSTRUCTIONS [DLA-G3010ZGE]

ESPAÑOL | ITALIANO | FRANÇAIS | DEUTSCH | ENGLISH

JVC

D-ILA MULTIMEDIA PROJECTOR
D-ILA MULTIMEDIA PROJECTOR
D-ILA MULTIMEDIA PROJECTOR
D-ILA MULTIMEDIA PROJECTOR
D-ILA MULTIMEDIA PROJECTOR

INSTRUCTIONS

DLA-G3010ZGE

Printed in Japan
0700MWH-A-N
1000-H-CR-VP

JVC
VICTOR COMPANY OF JAPAN, LIMITED

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- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into the product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
- Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance – this indicates a need for service.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- When connecting other products such as VCR's, and personal computers, you should turn off the power of this product for protection against electric shock.
- Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
- Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
- Do not look into the inside of this unit through vents (ventilation holes), etc., to not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
- Do not drop, hit, or damage the light-source lamp (lamp unit) in any way. It may cause the light-source lamp to break and lead to injuries. Do not use a damaged light-source lamp. If the light-source lamp is broken, ask your dealer to repair it. Fragments from a broken light-source lamp may cause injuries.
- The light-source lamp used in this projector is a high pressure mercury lamp. Be careful when disposing of the light-source lamp. If anything is unclear, please consult your dealer.
- Do not "ceiling-mount" the projector to a place which tends to vibrate; otherwise, the attaching fixture of the projector could be broken by the vibration, possibly causing it to fall or overturn, which could lead to personal injury.
- Use only the accessory cord designed for this product to prevent shock.

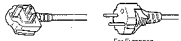
  The power supply voltage rating of this product is AC 100 V– AC 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

  When it is used by other power supply voltage, power cable must be changed.

  Ensure that the power cable used for the projector is the correct type for the AC outlet in your country.

  Consult your product dealer.

Power cord



For United Kingdom

For European continent countries

*** DO NOT allow any unqualified person to install the unit.**
Be sure to ask your dealer to install the unit (eg. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

POWER CONNECTION (United Kingdom only)

WARNING

Do not cut off the main plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adaptor or consult your dealer.

If nevertheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the main supply.

If a new main plug has to be fitted, then follow the instruction given below:

WARNING:

THIS APPARATUS MUST BE EARTHED.

IMPORTANT:

The wires in the mains lead on this product are coloured in accordance with the following cord:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As these colours may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal which is marked ⏚ with the letter E or the safety earth or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

When replacing the fuse, be sure to use only a correctly rated approved type, re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

How To Replace The Fuse
Open the fuse compartment with the blade screwdriver, and replace the fuse.
(* An example is shown in the illustration below.)

Fuse

ENGLISH

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Accessories

The following accessories are included with this projector. Check for them; if any item is missing, please contact your dealer.

■ **Remote control unit (RM-MX3100G)**

■ **Personal computer connection cable [approx. 2 m]**
(D-sub, 3-row 15 pin)

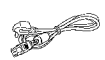
■ **AA/R6-size dry cell battery (x2)**
(for checking operation)

■ **AV connection cable [approx. 2 m]**

■ **Power cord [approx. 2.5 m]**
(for European continental countries)

■ **Remote cable [approx. 3 m]**
(3.5 mm dia. stereo mini plug)

(for United Kingdom)
Included as a special accessory only when shipped to the United Kingdom.



■ **Conversion adapter for Mac**
(for Macintosh)

Memo

• The DLA-G3010ZGE model is comprised of the projector main unit (DLA-G3010ZG model) and the above accessories.

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DLA-G3010ZGU
DLA-G3010ZGE

JVC®

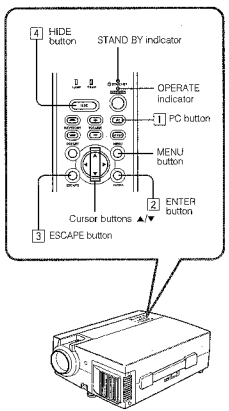
English

The explanation of how to reset the lamp time using the buttons on the projector itself ("Resetting the Lamp Use Time" on page 55 of the English section in the DLA-G3010ZGU instruction manual) was insufficient. We apologize for this and add the following instructions.

How to reset the lamp time with the projector itself

Use the following procedure when resetting the "Lamp time" using the buttons on the projector itself. Also, carefully read the cautions and notes on page 55 of the English section in the instruction manual.

■ Projector's buttons



CAUTION

- Reset the lamp use time only when you have replaced with a new light-source lamp. Never reset it during lamp life, otherwise the replacement time may become unclear, and lead to degraded performance or lamp explosion.

1 Turn on the MAIN POWER switch to go into stand-by mode.

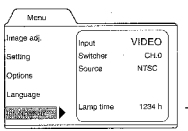
In stand-by mode, the STAND BY indicator on the projector lights up.

2 Press the following buttons on the projector, sequentially.

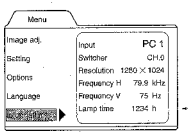
1. **Momentary press the PC button.**
2. **Momentary press the ENTER button.**
3. **Momentary press the ESCAPE button.**
4. **Press and hold the HIDE button for two seconds or more.**

** During this sequence, the STAND BY and OPERATE indicators alternately blink about every approx. 3 seconds. After completion of the sequence, the STAND BY indicator alone stays on.*
** When you make a mistake in button operations, return to the beginning of the sequence.*
** To check the lamp time on the menu, press the MENU button and select "Information" with the cursor button ▲ or ▼.*
The lamp use time is indicated in the item "Lamp time".

Video main menu



PC main menu



LCT0967-001A

JVC®

D-ILA® MULTIMEDIA PROJECTOR
DLA-G3010ZGU

English

ERRATA

There were some errors in the instruction manual. We apologize for this and correct them as follows.

■ Page 17 "Projection Distance and Screen Size" (1st item)

Error: • The range of projection distances that can be focused is approximately 2 m (6.56 ft) to approximately 10 m (32.81 ft) when the aspect ratio of the screen is 4:3.

Correction: • The range of projection distances that can be focussed is approximately 2 m (6.56 ft) to approximately 15 m (49.22 ft) with the Tele (T) side and approximately 2.5 m (8.20 ft) to approximately 12 m (39.37 ft) with the Wide (W) side when the aspect ratio the screen is 4:3.

■ Page 17 "Projection Distance and Screen Size" notes (7th and 8th items)

Error: • When using a projection screen size of 55" or less, it is recommended to use the projector with T (tele-) side. Using it with W (wide) side is not recommended.
• The guaranteed projection distance range from approx. 6.56 ft (2 m) to 32.81 ft (10 m).

Correction: • When using a projection screen size of 70" (approx. 177.8 cm) or less, it is recommended to use the projector with T (tele-) side. Using it with W (wide) side is not recommended.

■ Page 18 "Projection Distance and Screen Size" (■ Relationship between projection distances and projection screen sizes)

* The correct details are shown in the table below.

Projection screen size of 4:3 aspect ratio (Diagonal length)	Approximate projecting distance		
	W (Wide)		T (Tele-)
42" (approx. 106.7 cm)	———— *	~	approx. 6.66 ft (approx. 2.03 m)
45" (approx. 114.3 cm)	———— *	~	approx. 7.15 ft (approx. 2.18 m)
50" (approx. 127.0 cm)	———— *	~	approx. 7.97 ft (approx. 2.43 m)
55" (approx. 139.7 cm)	———— *	~	approx. 8.79 ft (approx. 2.68 m)
60" (approx. 152.4 cm)	———— *	~	approx. 9.61 ft (approx. 2.93 m)
65" (approx. 165.1 cm)	———— *	~	approx. 10.43 ft (approx. 3.18 m)
70" (approx. 177.8 cm)	approx. 8.69 ft (approx. 2.65 m)	~	approx. 11.25 ft (approx. 3.43 m)
75" (approx. 190.5 cm)	approx. 9.35 ft (approx. 2.85 m)	~	approx. 12.07 ft (approx. 3.68 m)
80" (approx. 203.2 cm)	approx. 9.97 ft (approx. 3.04 m)	~	approx. 12.89 ft (approx. 3.93 m)
85" (approx. 215.9 cm)	approx. 10.59 ft (approx. 3.23 m)	~	approx. 13.71 ft (approx. 4.18 m)
90" (approx. 228.6 cm)	approx. 11.25 ft (approx. 3.43 m)	~	approx. 14.53 ft (approx. 4.43 m)
95" (approx. 241.3 cm)	approx. 11.87 ft (approx. 3.62 m)	~	approx. 15.35 ft (approx. 4.68 m)
100" (approx. 254.0 cm)	approx. 12.53 ft (approx. 3.82 m)	~	approx. 16.17 ft (approx. 4.93 m)
110" (approx. 279.4 cm)	approx. 13.78 ft (approx. 4.20 m)	~	approx. 17.81 ft (approx. 5.43 m)
120" (approx. 304.8 cm)	approx. 15.06 ft (approx. 4.59 m)	~	approx. 19.42 ft (approx. 5.92 m)
130" (approx. 330.2 cm)	approx. 16.33 ft (approx. 4.98 m)	~	approx. 21.06 ft (approx. 6.42 m)
140" (approx. 355.6 cm)	approx. 17.61 ft (approx. 5.37 m)	~	approx. 22.70 ft (approx. 6.92 m)
150" (approx. 381.0 cm)	approx. 18.88 ft (approx. 5.76 m)	~	approx. 24.35 ft (approx. 7.42 m)
180" (approx. 457.2 cm)	approx. 22.70 ft (approx. 6.92 m)	~	approx. 29.26 ft (approx. 8.92 m)
200" (approx. 508.0 cm)	approx. 25.28 ft (approx. 7.70 m)	~	approx. 32.54 ft (approx. 9.92 m)
250" (approx. 635.0 cm)	approx. 31.92 ft (approx. 9.73 m)	~	approx. 40.85 ft (approx. 12.45 m)
300" (approx. 762.0 cm)	approx. 38.35 ft (approx. 11.69 m)	~	approx. 49.05 ft (approx. 14.95 m)

*: *Out of guaranteed projection distance*

■ Page 62 "Optical mechanism system" item of "Specifications" (5th item (Projection distance))

Error: Approx. 6.56 ft (Approx. 2 m) ~ Approx. 32.81 ft (Approx. 10 m)

Correction: Tele (T) side : Approx. 6.56 ft (Approx. 2 m) ~ Approx. 49.22 ft (Approx. 15 m)
Wide (W) side: Approx. 8.20 ft (Approx. 2.5 m) ~ Approx. 39.37 ft (Approx. 12 m)

■ Page 63 "General" item of "Specifications" (4th item)

Error: • Allowable relative humidity 20% to 60% (no condensation)

Correction: • Allowable relative humidity 20% to 80% (no condensation)

LCT0982-001A

D-ILA MULTIMEDIA PROJECTOR
D-ILA MULTIMEDIA PROJEKTOR
PROJECTEUR MULTIMÉDIA D-ILA

DLA-G3010Z
DLA-G3010ZGU
DLA-G3010ZGE

PRECAUTION: [ENGLISH]
When installing (adjusting / setting) the unit

1. When using "TOP BOTTOM INV." on the "OPTIONS" menu, reset the unit by following the procedure bellow.
   This reset procedure must be performed before operating the unit.
   (1) Change the "TOP BOTTOM INV." setting on the "OPTIONS" menu.
   (2) Press the "OPERATE" button to enter the unit into the stand-by mode.
   (3) Press the "OPERATE" button again to turn on the unit.
2. Adjust the focus after projecting a picture for 30 minutes or longer.

When adjusting the keystone

Depending on the type of signal, some noise may appear in the picture when the keystone is adjusted. This is not a malfunction.

PRÉCAUTIONS: [FRANÇAIS]
Lors de l'installation (ajustements/réglages) de l'appareil

1. Lors de l'utilisation de "INVERS H-B" dans le menu "OPTIONS", réinitialisez l'appareil en suivant la procédure ci-dessous.
   Cette procédure de réinitialisation doit être réalisée avant d'utiliser l'appareil.
   (1) Changez le réglage "INVERS H-B" dans le menu "OPTIONS".
   (2) Appuyez sur la touche "OPERATE" pour mettre l'appareil en mode d'attente.
   (3) Appuyez de nouveau sur la touche "OPERATE" pour mettre l'appareil sous tension.
2. Régler la mise au point après la projection d'une image pendant 30 minutes ou plus.

Lors du réglage de l'angle de projection

Suivant le type de signal, des parasites peuvent apparaître sur l'image lorsque l'on règle l'angle de projection. Ce n'est pas un problème de fonctionnement.

Vorsicht: [DEUTSCH]
Bei Installation (Justierung/Einstellung) des Geräts

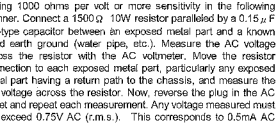
1. Bei Benutzung von „INVERT OBEN/UNTEN" im Menü „OPTIONEN" muß das Gerät auf folgende Weise zurückgestellt werden.
   Diese Rückstellprozedur muß vor Benutzung des Geräts durchgeführt werden.
   (1) Ändern Sie die „INVERT OBEN/UNTEN"-Einstellung im Menü „OPTIONEN".
   (2) Drücken Sie die Taste „OPERATE", um das Gerät in den Standby-Modus zu versetzen.
   (3) Drücken Sie wieder die Taste „OPERATE", um das Gerät einzuschalten.
2. Die Schartstellung justieren, nachdem ein Bild 30 Minuten lang oder länger projiziert worden ist.

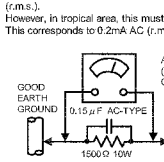
Bei Einstellung der Trapezverzerrung

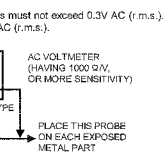
Je nach Signaltyp kann einiges Rauschen im Bild auftreten, wenn die Trapezverzerrung justiert wird. Dies ist normal und keine Fehlfunktion.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (Incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
    (1) **Dielectric Strength Test**
    The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
    (. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
    This method of test requires a test equipment not generally found in the service trade.
    (2) **Leakage Current Check**
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
    However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).
    ● **Alternate Check Method**
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
    However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).







■ WARNING AND CAUTION LABELS

Labels advising of warning and caution are affixed on and in various locations of the product.
Take careful notice of these during service and inspection.

⚠ WARNING : Risk of lethal or otherwise serious personal injury.

⚠ CAUTION : Risk of personal injury and damage to the product.

Class	Pictorial	Label (Seal) advisory	Location
⚠WARNING	Hot, breakable	This projector lamp emits high heat and contains high-pressure during use. If touched, the lamp (bulb) may rupture and burns may result. Before attempting to replace the lamp, remove the power cord plug from the outlet and wait for the lamp (bulb) to cool (at least one hour). Then proceed to replace the lamp.	Bottom chassis (front-left)
⚠WARNING	High voltage	Never open any cover on the projector except the lamp and filter covers. Dangerous electrical voltage inside the projector.	Bottom chassis (front-right)
⚠WARNING	High brightness	Never look into the lens while the projector is on.	Top cover (lens side)
⚠CAUTION	Hot, shock hazard	Do not insert foreign objects into the ventilation holes as this can result in fire or electrical hazards. Do not block the ventilation holes as this may cause the internal temperature to rise and possibly result in fire. When the inside of the unit requires cleaning, consult your nearest JVC dealer or service center.	Bottom chassis (rear)
⚠CAUTION	High voltage	Turn off before opening this lamp cover. See user's manual for replacing the Lamp. Replace with same type (**BHL5005**) lamp rated at **200W, AC80V.**	Bottom chassis (rear)
⚠CAUTION	Hot	Caution, high temperature	Lamp unit (front) *< SEAL >*

■ ADDITIONAL CAUTIONARY ITEMS

- **High voltage of about 14 kV is applied for lighting the lamp.**
  During adjustments and other work with the cover removed, extreme care is needed to avoid electric shock.
- Use care to avoid touching the fan or safety switch terminals during work with the cover removed.
- Select a stable, horizontal work site to prevent dropping the product and components.
- Use the power cord and interface cable supplied with the product.

Before starting work, be sure to also check the safety notices contained in the instruction manual.

SERVICE POLICY

The following service policy is being utilized.

Item	Part number	Service method
MAIN PWB ASS'Y	**SXG-1001A**	Replace **module**
TERMINAL PWB ASS'Y	**SXG-0J001A**	Replace **module**
VIDEO PWB ASS'Y	**SXG-0V001A**	Replace **module**
DRIVE PWB ASS'Y	**SXG-3002A**	Replace **module**
POWER PWB ASS'Y	**SXG-9001A**	Replace **parts**
POWER CONTROL MODULE	**SXG-0P001A**	Replace **module**
OPERATION UNIT	**QAL0258-001**	Replace **module**
LAMP BALLAST UNIT	**QAL0257-002**	Replace **module**
OPTICAL BLOCK ASS'Y	**G3010-OPSA**	Replace **module**
LAMP UNIT	**BHL5005-SG**	Replace **module**

DIFFERENCE LIST

DEFFERENCES OF "U" MODEL AND "E" MODEL

In addition to the packaging and accessories the main differences between the DLA-G3010ZGU (U model) and DLA-G3010ZGE (E model) are as follows.

Item	U (North American) model	E (Europe / Asia) model	Remark
PACKING CASE	LC20668-002A	LC20668-003B	
POWER CORD	QMPE100-250-K	QMPL050-250-K	Accessory
CORE FILTER	QQR1178-001	QQR1180-001	Attached power cord
FERITE CORE	----------	QQR0963-001	Attached AV cable
INSTRUCTION BOOK	LCT0854-001B	LCT0863-001B	Accessory

DEFFERENCES OF DLA-G10U / DLA-G10E

The following table indicates the differences of this model with respect to DLA-G10U or DLA-G10E.

Item	DLA-G3010ZG U / E	DLA-G10 U / E	Remark
DIMENSIONS (W×H×D)	**29.0cm × 13.2cm × 36.3cm**	42.5cm × 24.6cm × 37.5cm	W : expect handle and protrusions
WEIGHT	**6.0kg**	14.8kg	
LAMP OUTPUT	**200W**	400W	
LIGHT SOURCE LAMP	**Ultra high-pressure mercury**	Xenon	
ZOOM / FOCUS ADJUSTMET	**Manual**	Electromotion	
ZOOM MAGNIFICATION	**1.3 × (1.9:1 – 2.5:1)**	1.5 × (2:1 – 3:1)	
PROJECT DISTANCE / IMAGE SIZE	**2m – 15m / 42" – 300"**	2.5m – 20m / 42" – 521"	At tele side / 4:3 aspect ratio
INPUT FREQUENCY [Hz]	**15k – 105k (H) / 50 – 90 (V)**	15k – 82k (H) / 50 – 78 (V)	
COMPONENT INPUT	**Combined with RGB (PC2)**	Independent (BNC ×5 ; AV-IN)	
RGB OUTPUT	**Absent**	Provided (D-sub 15-pin ×1)	
AUDIO FACILITIES / SPEAKER	**Monaural / 4cm round type**	Stereo / 6cm × 3cm elliptical	
AUDIO INPUT	**2 (VIDEO ×1 / PC ×1)**	3 (AV ×1 / COMPUTER ×2)	
AUDIO OUTPUT	**Absent**	Provided (mini ×1)	
KEYSTONE CORRECTION	**Provided (set/menu)**	Absent	
DIGITAL ZOOM	**Provided (remote control)**	Absent	
FREEZE (STILL PICTURE)	**Provided (remote control)**	Absent	
SOURCE SETTING	**Absent (auto-select only)**	Provided (20 mode)	
TEXT MODE	**Absent**	Provided (3 mode)	
TONE (VIDEO POSITION)	**Provided (TV / Cinema)**	Absent	
PEDEATAL CLAMP MODE	**Absent**	Provided (BP / ST)	
RESIZE MODE	**2 (Panel / Aspect)**	1	
SLEEP TIME MODE	**15min / 30min / 60min / OFF**	10min / 20min / 30min / 60min	With respect to OFF (0 minute)
LAMP COMPARTMENT	**Front (right side)**	Bottom (rear right)	
DUST FILTER LOCATION	**Left side (rear) : tab secured**	Bottom (left side)	
COOLING FAN QUANTITY	**1 (exhaust)**	5	
WIRED REMOTE CONTROL	**Provided**	Absent	

INSTALLATIONS

INSTALLATION METHOD

The D-ILA system (reflecting type active matrix liquid crystal system) does not require convergence adjustment.
Note the following when placed on a floor (refer to OPERATING INSTRUCTIONS for actual operating method).

1) Place the projector at the position needed for the required image size observe the projector is not tilted horizontally.
   ✻ The image size is 42 to 300 inches diagonal (4:3), requiring a projection distance of 2m to 15m (tele side).
2) Adjust the placement site and screen tilt so that the projection angle is perpendicular to the screen.
3) Adjust the placement site and screen position (height) so that the projection lens center is at the lower edge of the screen.
4) Project an image on the screen. (Connect video equipment and power source, switch power on and select the input.)
5) Fine adjust the projected image position and angle.
   If adjusting the placement site and screen cannot correct the projected position (too low) or angle (lower part of image widened), adjust the front foot.
   If the projected image is tilted left to right and adjusting the placement site and screen cannot correct adequately, adjust the rear left foot.
7) Turn the lens ZOOM ring by hand and adjust for suitable image size.
8) Turn the lens FOCUS ring by hand and adjust to correct image blur.
9) Adjust **[KEYSTONE]** if the image appears expanded or contracted at the top or bottom edge.
10) ***If the above measures do not adequately adjust the image position and clarity, proceed as follows.***
    If input is VIDEO or Y/C, select Menu <**Setting**> - [**Tracking**] and adjust the horizontal image size and display range at [**Position**] – [**Disp.Posi.**], adjust the horizontal and vertical position.
    If the input is PC1 (D-sub 15-pin) or PC2 (BNC), adjust with [**QUICK ALIGN.**] (adjusted automatically). If [**QUICK ALIGN.**] is inadequate, separately adjust <**Setting**> - [**Tracking**] (horizontal image size and display range) and [**Phase**] (image jitter and blur) and [**Position**] – [**Disp.Posi.**].
11) Adjust <**Image adj.**> - [**Brightness**], [**Contrast**], [**Sharpness**], [**Color**] and [**Tint**] for optimum picture.

INSTALLATION SITE AND STATUS

- The projector contains a fan for cooling. Obstruction of the ventilation openings can lead to internal overheating, abnormal operation and failure. Also observe there is plenty of free space between the projector and adjacent walls, ceiling and other equipment.
  Note that excess heat can cause failure and damage to both the projector and nearby equipment.
  ✻ **Air intakes** : ◆ **For intake** = Left side (front [x2] / rear [filter cover])
  ◆ **For exhaust** = Right side of front (lamp cover) : exhaust through right side
  ✻ **Required spacing** : all around = 25 cm (If projector is encased [air condition] : Front = 15cm / left and right sides = 30cm / rear = 15cm)
- Avoid locations that are wobbly or inclined. If the setting site floor has protrusions or horizontal cannot be maintained, there is risk the projector may drop, fall over, etc. If located in a site where left to right tilt is greater than ±5° and front to rear tilt greater than ±25°, particularly the optical system components can be severely affected and there is risk basic performance and quality of the projector cannot be maintained.
- Observe the site can stably bear the weight (approx. 6kg) of the projector over a long period of time.
- If mounted on a stand with casters, observe the casters are securely braked to prevent movement.
- Avoid suspending in a location subject to vibration. Both the projector and mounting fixture can be damaged.
- Do not place in the following types of locations.
  Especially, Avoid locations subject to dust, grit, smoke or other airborne contaminants. Use adequate caution when providing external ventilation, filters and dust protection.
  - ◆ **Near water or in humid sites**
  - ◆ **Dust or grit**
  - ◆ **Oily or tobacco smokes**
  - ◆ **Near heaters or heat generating equipment**
  - ◆ **Direct sunlight**
  - ◆ **Very high or very low temperature**

SPECIFIC SERVICE INSTRUCTIONS

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

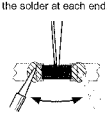
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

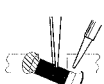
1. How to remove Chip parts

◆ **Resistors, capacitors, etc.**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

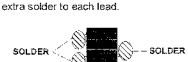


(2) Shift with tweezers and remove the chip part.



◆ **Transistors, diodes, variable resistors, etc.**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

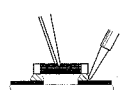
Note : After removing the part, remove remaining solder from the pattern.

2. How to install Chip parts

◆ **Resistors, capacitors, etc.**

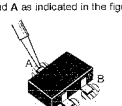
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

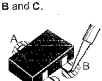


◆ **Transistors, diodes, variable resistors, etc.**

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



LAMP UNIT INSTRUCTIONS

Refer to the OPERATING INSTRUCTIONS for a detailed operating description.

LAMP UNIT : BHL5005-SG

1. LAMP LIFE

Life of the projector lamp (time to reach 1/2 average brightness) is about 2000 hours.

* Lamp use time can be checked at the menu **<Information>** - **[Lamp time]**.

2. OPERATION WHEN LAMP USE TIME EXCEEDS 1900 HOURS

■ **1900 to 2000 HOURS**

◆ **Power on** : **LAMP** LED lights.

◆ **Operation** : Replace lamp message appears on screen (* press any button to extinguish).

■ **2000 to 2010 HOURS**

◆ **Power on** : **LAMP** LED flashes.

◆ **Operation** : **"Warning"** and **"Lamp replacement"** messages appear on screen, and **"Warning"** flashes.

* Press **[ESCAPE]** button to extinguish the display. But after 1 hour, **"Warning"** and **"Lamp replacement"** again appear.

* At power off, the stand-by mode is produced and further operation is prevented.

* **To again use the projector, replace the lamp unit and reset the lamp use time indication.**

■ **AFTER 2010 HOURS**

◆ **Power on** : Power is cut and cool-down mode entered, **LAMP** and **OPERATE** LEDs flash.

3. HANDLING CAUTIONS

- Use a cross-head screwdriver to take out and reinstall the lamp cover (2 screws) and lamp unit (2 screws). Refer to the OPERATING INSTRUCTIONS.
- Observe the following cautions.
  - ◆ Be sure to disconnect the power cord from the AC power source.
  - ◆ The lamp remains quite hot after power off. Be sure to allow plenty of time (30 minutes to 1 hour) to cool before proceeding.
  - ◆ The lamp can break if dropped or subjected to physical shock.
  - ◆ Use care not to directly touch or soil the lamp projecting (glass) face.
- When installing the lamp unit, observe the interior projections of the lamp cover are securely inserted into the holes of the projector. Since the lamp cover projections engage the interlock switch part of the protector circuit (normal operating state), be sure the cover is properly positioned and secure with screws.
- **The replaced old lamp (depleted lamp unit) can be discarded in the same manner as a fluorescent lamp.** Check local ordinances and dispose of the used lamp as prescribed.

4. LAMP USE TIME RESET

- Be sure to reset the Lamp use time after replacing the lamp unit. Unless reset, the projector will cease operation (lamp will not light) when 2000 hours are reached.
  * Conversely, reset the use time only after replacing the lamp.
- **RESETTING**
  - ◆ **Remote control unit operating**
    1) Set for stand-by mode.
    2) In sequence, press the **[QUICK ALIN]**, **[ENTER]** and **[ESCAPE]** buttons
    3) Press the **[FREEZE]** button for more than 2 seconds.
  - ◆ **Projector operating**
    1) Set for stand-by mode.
    2) In sequence, press the **[PC]**, **[ENTER]** and **[ESCAPE]** buttons
    3) Press the **[HIDE]** button for more than 2 seconds.

  * The **STAND-BY** and **OPERATE** LEDs alternately flash for about 3 seconds, then only the **STAND-BY** LED lights steadily.
- **RESET AFTER REPLACING MAIN PWB ASS'Y**

  The lamp use time data are stored in memory on the MAIN PWB ASS'Y and need to be reentered after replacing the MAIN PWB ASS'Y. Use the special software and a personal computer to reenter the data. Afterwards, confirm the mode has been returned to that prior to board replacement.

PROJECTION SPECIFICATIONS AND NOTES

1. PROJECTION DISTANCE

- The usable projection distance (focus obtainable) is tele side : approx. 2m to 15m / wide side : approx. 2.5m to 12m. The picture size (4:3) is 42 to 300 inches (tele side) / 70 to 300 inches (wide size).
- The wide lens setting is recommended when using the maximum distance.
- If picture edge distortion occurs at the minimum distance (2m), increase the distance slightly.

2. PROJECTION IMAGE AND IMAGE SIZE

- The projection distances and image size relationship given in the operation manual is approximate for general reference. The actual values may vary due to lens tolerance and other factors.
- A line extended from the projection lens center goes to the bottom edge of the image. (※ Image size at 4:3 aspect ratio)
- Use the tele settings for image size below 70 inches.
- When setting the screen to determine image size, use the 4:3 aspect ratio.
  Setting the width for 4:3 also enables using the 16:9 aspect ratio.
- At the 16:9 aspect ratio, the picture is compressed vertically compared to 4:3 aspect ratio. The diagonal measurement is thus about 91.8% that of 4:3.
- The projector a horizontal (vertical line) "keystone (trapezoid distortion)" due to projection angle wavering corrective function. Keystone compensation yields a smaller image than the uncompensated picture. When the image is important, to the extent possible, correct by selecting the projector position, screen front to rear tilt and projection angle (perpendicular) to the screen.

3. OTHER CAUTIONS

- Use care not to directly touch the lens. Clear soiling from the lens with optical lens paper or a photographer's blower.
- Check the lens cap is removed before projecting. If left installed the projector can overheat and the lens cap can be deformed.
- Sunlight or other illumination can render the image difficult to see. Use a curtain or other means to shield the screen from stray light.

CONNECTION AND OPERATION CAUTIONS

- The projector can function with fH 15 to 105 kHz, fV 50 to 90 Hz signal input, but even within this range, partial picture loss, fold-over at the top and bottom picture edges and other effects can occur according to signal type and conditions to prevent a normal projected image (see "Signals that can be input the projector" of the OPERATING INSTRUCTION).
- The projector is compatible with UXGA input (H : 1600 × V : 1200 dots). When Resize is set to 1:1 with UXGA input, there is vertical and horizontal picture loss, and only the center image is shown.
- VGA computer signal may be detected and displayed as 480p mode of the video system. Select the video system input at the menu.
- If the video signal from a VTR or other source contains a large jitter component, distortion, blurring or instability can occur in the picture. In this case, use a TBC (time base corrector) or video equipment (e.g., VTR) that contains a TBC.
- The digital zoom and still picture (freeze) functions do not operate with UXGA signal input. When these functions are desired, use another signal input.
- When attached remote control unit is connected for wired operation, wireless remote control is inoperative. To use the wireless function, disconnect the remote control cable from both the set and remote control unit.
- The menu indication differs when the input is selected for video system or computer system. See below.

Item	VIDEO	COMPUTER
<Image adj.> **Sharpness**	●	△
<Image adj.> **Color**	●	×
<Image adj.> **Tint**	●	×
<Setting> **Decoder**	●	×
<Setting> **Tone**	●	×
<Setting> **Aspect change**	●	×

Item	VIDEO	COMPUTER
<Setting> **Phase**	×	●
<Setting> **Resize**	×	●
<Information> **Source**	●	×
<Information> **Resolution**	×	●
<Information> **Frequency H**	×	●
<Information> **Frequency V**	×	●

● : *Present* × : *Absent* △ : *Adjustment range 1 to 5 (inoperative when [Resize] is "1:1")*

SERVICE MENU

The service menu contains items not ordinarily needed by the user.
Use these as necessary during service.

1. ENTER

1) No menu shown.
2) Press the [△] button.
3) Within 0.5 second, press the [▽] button.
4) Within 0.5 second, press the [▷] button.
5) Within 0.5 second, press the [◁] button.
6) Within 0.5 second, press the [ENTER] button to display the service menu (Fig. 1).

∗ If the service menu is not shown, carefully repeat the above steps.

2. RELEASE

Press the [Escape] button to exit the menu indication.

3. BASIC OPERATION

Use the following buttons to operate the service menu.

- [△] / [▽] : Select item
- [◁] / [▷] : Select setting mode or set adjustment value
- [ENTER] : Select [Color temp.], [Color bars], [Next page] and [previous page]

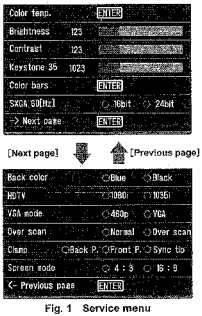


Fig. 1 Service menu

4. SETTING ITEMS

Item	Initial value	Adjustment range	Description	Setting object
◆ Page 1				
Color temp.	[Service adjust. value]	0 to 255	At <Options 1> - [Color temp.], change RGB values to Low, Middle, High and adjust the color temperature. Press [ENTER] button to show the color temperature adjustment screen (Fig. 2).	Common
Brightness	[Service adjust. value]	0 to 255	Main brightness adjustment when PC signal is selected. This value is set to "0" during user adjustment.	Each signal (PC system)
Contrast	[Service adjust. value]	0 to 255	Main contrast adjustment when PC signal is selected. This value is set to "0" during user adjustment.	Each signal (PC system)
Keystone 35	128	0 to 1023	Main keystone adjustment. This value (128) is set to "0" during user adjustment.	Common
Color bars ∗	(OFF)	[On/Off select]	Shows color bar pattern for testing (Fig. 3). Press [ENTER] button for display.	------
SXGA 60[Hz] ∗	16bit	[Select 2 items]	Sets processing for SXGA signal input (V : 60 Hz) color gradation. **[16bit]** : Display 16bit gradation image (65536 colors) **[24bit]** : Display 24bit gradation image (16777216 colors) (unable to use FREEZE and DIGITAL ZOOM)	Common (SXGA)
→ Next page	------	------	Press [ENTER] button to shift to page 2.	------
◆ Page 2				
Back color	Blue	[Select 2 items]	Sets no signal background color to blue or black. **[Blue]** : Blue color **[Black]** : Black color	Common
HDTV	1080i	[Select 2 items]	Sets type of HDTV signal input as 1080i (digital) or 1035i (analog). **[1080i]** : Digital broadcast signal **[1035i]** : Analog broadcast signal	Each signal (HDTV)
VGA mode ∗	480p	[Select 2 items]	Sets processing for VGA signal input (H : 31.5 kHz / V : 60 Hz). **[480p]** : Process as 480p (video system) signal **[VGA]** : Process as VGA (PC system) signal	Each signal (VGA)
Over scan ∗	Over scan	[Select 2 items]	Sets scan size for video signal. **[Normal]** : Under scan (100%) **[Over scan]** : Normal (95%)	Each signal (AV system)
Clamp ∗	Back P.	[Select 3 items]	Sets clamp position. Use if the screen brightness (black level) is unsatisfactory. **[Back P.]** : Back porch **[Front P.]** : Front porch **[Sync tip]** : Sync. signal	Common (AV system)
Screen mode ∗	4:3	[Select 2 items]	Sets projected 4:3 image size to match used screen (Fig. 4). **[4:3]** : For 4:3 aspect ratio screen (normal size) **[16:9]** : For 16:9 aspect ratio screen (slightly smaller) ∗ After changing the setting, switch off and then switch on power.	Each signal (AV system)
← Previous page	------	------	Press [ENTER] button to return to page 1.	------

∗ : When these items are set, the service menu is automatically closed.

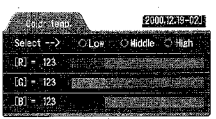


Fig. 2 [Color temp.] setting screen

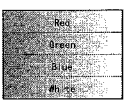


Fig. 3 [Color bar] setting screen

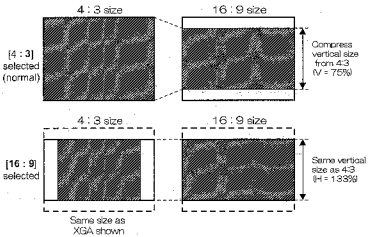

4 : 3 size
16 : 9 size
[4 : 3] selected (normal)
Compress vertical size from 4:3 (V = 75%)
4 : 3 size
16 : 9 size
[16 : 9] selected
Same vertical size as 4:3 (H = 133%)
Same size as XGA shown

Fig. 4 [Screen node] projection image

FACTORY SHIPPING SETTING

● SET (PROJECTOR) / REMOTE CONTROL UNIT

Switch / Item	Position
MAIN POWER	OFF
LENS ZOOM	Fully wide
LENS FOCUS	Just Focus
VIDEO	VIDEO
PC	PC1

Switch / Item	Position
VOLUME	0
DIGITAL ZOOM	1.0
FREEZE	OFF (moving picture)
HIDE	OFF (display)

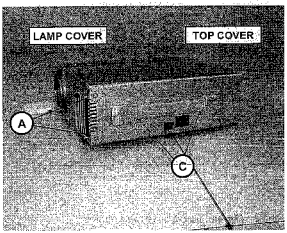
● MENU

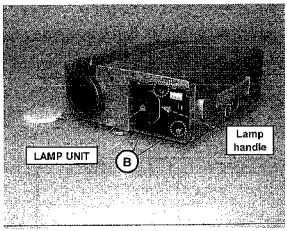
Item	Position
◆ *Image adj.*	
VIDEO INPUT (5 items)	All 0
COMPUTER INPUT	
Brightness	0
Contrast	0
Sharpness	3
◆ *Setting*	
Tracking	*Optimum* ★3
Phase ★1	*Optimum* ★3
Position	
Disp. Posi.	*Optimum* ★3
Menu	Vert.: center / Hori.: center
Resize ★1	Aspect
Decoder ★2	Auto
Tone ★2	TV
Aspect change ★2	4 : 3

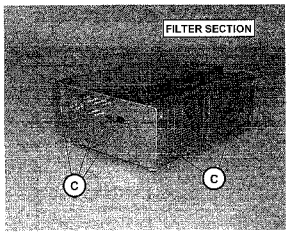
Item	Position
◆ *Option*	
Menu display	15sec
Line display	5sec
Color temp.	Middle
Keystone	0
PC2 (BNC)	RGB
Right-Left rev.	OFF
Top-Bottom rev.	OFF
RS-232C [bps]	19200
Sleep time [min]	OFF
◆ *Language*	English

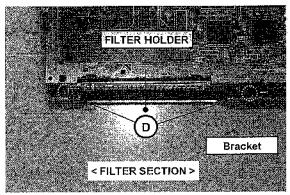
★1 : *Only when PC system signal selected* ★2 : *Only when VIDEO system signal selected* ★3 : *Differs with input signal*

DISASSEMBLY PROCEDURE









※ Confirm the power cord is disconnected from the AC outlet.

※ After switching off power, the lamp remains quite hot. Allow plenty of time for cooling before starting work.

■ LAMP COVER

1. Loosen 2 screws [A].
2. Take out the LAMP COVER.

■ LAMP UNIT

● Take out the LAMP COVER.

1. Loosen 2 screws [B].
2. Grasp the lamp handle and carefully pull the LAMP UNIT outward to take out.

■ TOP COVER

● Take out the LAMP COVER.

1. Take out the FILTER COVER.
2. Remove 7 screws [C].
3. Grasp the left and right sides. Carefully raise and take out the TOP COVER.

* The operating buttons (sheet) is installed in this state.

■ FILTER HOLDER

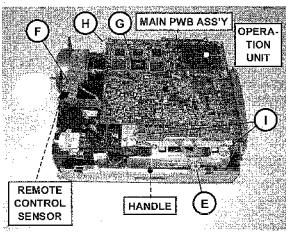
● Take out the TOP COVER.

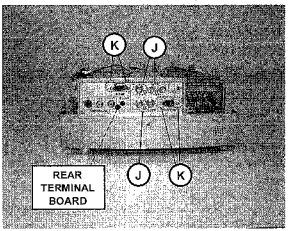
1. Remove 2 screws [D] and take out the bracket (front side).
2. Raise and take out the FILTER HOLDER.

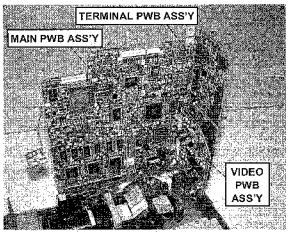
■ HANDLE *(Figure : Refer to next page)*

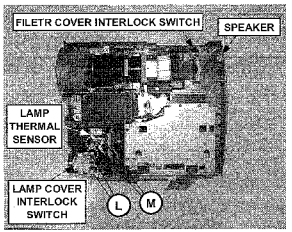
● Take out the TOP COVER.

1. Remove 1 screws [E].
2. Carefully raise both ends (attachments) of the HANDLE and take out the HANDLE.









■ REMOTE CONTROL SENSOR

- Take out the TOP COVER.

1. Remove 1 screw [F].
2. Take out the REMOTE CONTROL SENSOR.

■ MAIN PWB ASS'Y

- Take out the TOP COVER.
- Take out the FILTER HOLDER.
- Take out the REMOTE CONTROL SENSOR.

1. Remove 1 screw [G], 1 screw [H] and 2 screws [I].
2. Disengage connectors 004 and 005. In this state, the MAIN PWB ASS'Y (block) can be opened.
3. Disengage connectors 014 and 015. Take out the MAIN PWB ASS'Y (block).

※ The TERMINAL PWB ASS'Y, VIDEO PWB ASS'Y and OPERATION UNIT are located on the MAIN PWB ASS'Y.

■ REAR TERMINAL BOARD

- Enable opening the MAIN PWB ASS'Y.

1. Remove 3 screws [J] and 4 hex bolts (diameter 5 mm) [K].
2. Pull outward and take out the REAR TERMINAL BOARD.

■ TERMINAL PWB ASS'Y

- Take out the TOP COVER.
- Take out the REAR TERMINAL BOARD.

1. Pull outward and take out the shield board.
2. Disengage connectors 011 and 012. Take out the TERMINAL PWB ASS'Y.

■ VIDEO PWB ASS'Y

- Take out the MAIN PWB ASS'Y.

1. Disengage connectors 008, 009 and 010. Take out the VIDEO PWB ASS'Y.

■ SPEAKER

- Take out the MAIN PWB ASS'Y.

1. Disengage connector 013.
2. Disengage and take out the SPEAKER from the bottom chassis groove.

■ FILTER COVER INTERLOCK SWITCH

- Take out the MAIN PWB ASS'Y.

1. Disengage connector 023.
2. Disengage and take out the FILTER COVER INTERLOCK SWITCH from the bottom chassis groove.

■ LAMP COVER INTERLOCK SWITCH

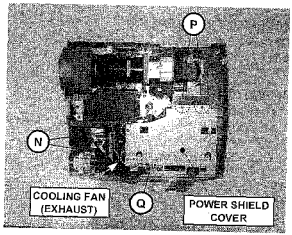
- Take out the TOP COVER.

1. Remove 2 screws [L] and take out the bracket.
2. Disengage 2 connecting wires and take out the LAMP COVER INTERLOCK SWITCH.

■ LAMP THERMAL SENSOR (THERMOSTAT)

- Take out the TOP COVER.

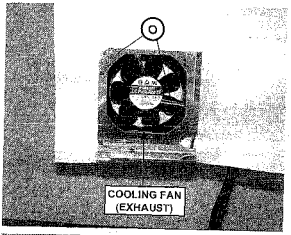
1. Remove 2 screws [M].
2. Disengage 2 connecting wires and take out the LAMP THERMAL SENSOR.



■ COOLING FAN (EXHAUST)

- Take out the LAMP UNIT.
- Take out the MAIN PWB ASS'Y.
- Take out the LAMP COVER INTERLOCK SWITCH.
- Take out the LAMP THERMAL SENSOR.

1. Disengage connectors 006.
2. Remove 2 screws [N] and take out the fan bracket.
3. Remove 3 screws [O] and take out the EXHAUST COOLING FAN.



■ POWER SHIELD COVER

- Take out the MAIN PWB ASS'Y.

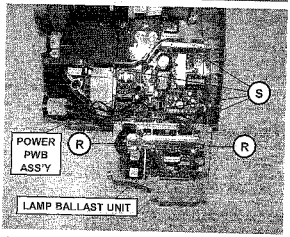
1. Remove 2 screws [P] and 1 screw [Q].
2. Disengage connectors 002 and wire clamp. Take out the POWER SHIELD COVER.

* In this state, the LAMP BALLST UNIT is installed.

■ LAMP BALLAST UNIT

- Take out the LAMP UNIT.
- Take out the LAMP COVER INTERLOCK SWITCH.
- Take out the POWER SHIELD COVER.

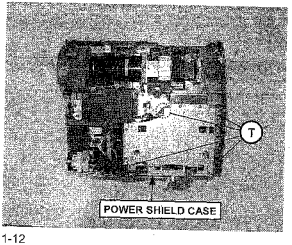
1. Remove 2 screws [R].
2. Disengage connectors 003 and take out the LAMP BALLAST UNIT.



■ POWER PWB ASS'Y

- Take out the POWER SHIELD COVER.

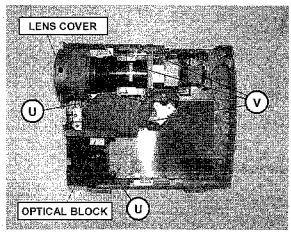
1. Remove 4 screws [S].
2. Disengage connectors 001, 003 and 006.
3. Disengage the wire clamps and take out the POWER PWB ASS'Y from the SHIELD CASE.
   In this time, tilt the board so as not to snag the main power switch and AC inlet on the POWER PWB ASS'Y.

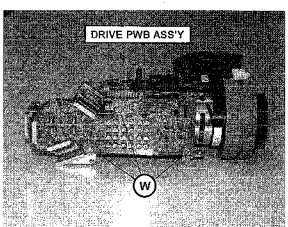


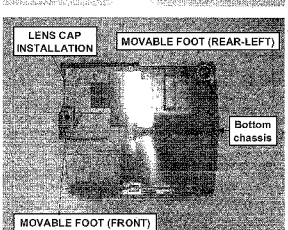
■ POWER SHIELD CASE (POWER BLOCK)

- Take out the MAIN PWB ASS'Y.
- Take out the LAMP COVER INTERLOCK SWITCH.
- Enable opening the POWER SHIELD COVER.

1. Remove 4 screws [T].
2. Disengage 2 LAMP THERMAL SENSOR connecting wires and take out the POWER SHIELD CASE.
   In this time, slightly shift toward the set center section to avoid snagging the main power switch and the AC inlet on the POWER PWB ASS'Y.







■ OPTICAL BLOCK

- Take out the MAIN PWB ASS'Y.
- Take out the LAMP COVER INTERLOCK SWITCH.
- Take out the LAMP THERMAL SENSOR.

1. Remove 2 screws [U] and 3 screws [V].
2. Carefully raise and take out the OPTICAL BLOCK.

* The OPTICAL BLOCK contains components such as prism and mirror which are very sensitive to physical shock. The projection lens is also included and the overall balance is precision adjusted. When handling, use care not to drop or otherwise subject the OPTICAL BLOCK to strong physical shock.
* The OPTIACAL BLOCK does not include the LAMP UNIT.

■ LENS COVER

- Take out the OPTICAL BLOCK.

1. Pull and take out the LENS COVER from the projection lens end of the OPTICAL BLOCK.

■ DRIVE PWB ASS'Y

- Take out the OPTICAL BLOCK.

1. Release the lock by sliding both ends of D-ILA device connectors 016, 017 and 018 toward the flat wire.
2. Remove 3 screws [W].
3. Disengage the flat wire from the connector and take out the DRIVE PWB ASS'Y.

* The flat wire connected to the D-ILA device is easily damaged. Use care not to damage the flat wire when disengaging from the connector.
* If damaged, the entire OPTICAL BLOCK must be replaced.

■ MOVABLE FOOT (FRONT)

- Take out the OPTICAL BLOCK.

1. Use a flat blade screwdriver or similar tool to disengage the tabs at the left and right sides.
2. Extend from the bottom chassis and take out the FRONT MOVABLE FOOT.

* Use care the removal tool does not damage the bottom chassis and other parts.
* When the FRONT MOVABLE FOOT is taken out, the rubber foot are installed.

■ MOVABLE FOOT (REAR-LEFT)

- Take out the OPTICAL BLOCK.

1. Remove the stopper.
2. Extend from the bottom chassis and take out the REAR-LEFT MOVABLE FOOT.

* When the REAR-LEFT MOVABLE FOOT is taken out, the stopper and rubber foot is installed.

SERVICE ADJUSTMENTS

BEFORE STARTING ADJUSTMENT

1. Adjustment items utilize a personal computer.
   This instruction is for **D03 PSA2 PRO Control** Program. Use the latest version program.
2. **Data back up is required before adjustments.**
3. Allow the equipment and test instruments adequate time (at least 30 minutes) to warm-up.
4. Confirm the set is properly connected to the specified AC power source.
5. Use care not to disturb internal controls and parts not specifically mentioned.
6. Unless specifically mentioned in the "ADJUSTMENT PROCEDURE", do not change any data.

INSTRUMENTS AND TOOLS

- **DC voltmeter (digital voltmeter)**
- **Oscilloscope**
- **PAL signal generator :** composite output or Y/C output
  - ▼ Gray scale : 0IRE – 100IRE
  - ▼ Color bar : include 75% white peak
- **PC signal generator**
  - ◆ Signal : VGA / SXGA
  - ▼ Gray scale : 0.7V(p-p) [include 100% white and 0% black]
    ※ Show at least 2 images on 1 screen (Upper scale and Lower scale must be reversed)
  - ▼ Cross hatch
  - ▼ Flat (raster) pattern : 0% black
- **Lightmeter** [for example : Minolta T-1]
- **Remote control unit [RM-M3010G]**
- **Personal computer**

Operating system	Windows 95
Memory	More than 16 Mbytes
Hard disk free space	More than 5 Mbytes
RS-232C interface	At least 1 port
Display resolution	Minimum : 800 × 600 pixels Recommended : 1024 × 768 pixels or better
Display colors	Minimum : 8 bits/pixel Recommended : 16 bits/pixel or better
Input devices	Keyboard and mouse

- **Adjustment software : D03 PSA PRO2 control (attached luminance table)**
- **RS-232C 9-pin NULL-MODEM (cross) cable**
- **Photoelectric conversion device** (one of these)
  - ◆Lightmeter [Minolta T-1] A-out (Analog output)
  - ◆Photodiode
  - ◆Phototransistor or CdS photoconductor with amplifier
- **Color filters**
  - ◆G color filter (ex. MELLES GRIOT 03 FIV 044)
  - ◆R color filter (ex. MELLES GRIOT 03 FIB 014)
  - ◆B color filter (ex. MELLES GRIOT 03 FIV 028)
- **Screen**
- **Darkroom** (illumination less than 0.03 lx)

REQUIRED ADJUSTMENTS BY REPLACING COMPONENTS

The following adjustment procedure is required after replacing PWB ASS'Ys, LAMP BALLAST UNIT and OPTICAL BLOCK. Items noted as "Check" means check the condition then adjust if required.

■ COMPONENTS REQUIRED ADJUSTMENTS AT REPLACING

Adjustment items	MAIN PWB ASS'Y	TERMINAL PWB ASS'Y	VIDEO PWB ASS'Y	DRIVE PWB ASS'Y	POWER PWB ASS'Y	LAMP BALLAST UNIT	OPTICAL BLOCK
1. D-ILA COMMON DC	○				●	●	●
2. PIXEL SHIFT	●			○			●
3. D-ILA FRAME LUMINANCE	●			○			●
4. GAMMA (GRADATION / WHITE BALANCE)	●				●	●	●
5. SHADING (UNIFORMITY)	●	○	○				●
6. 8-PHASE VERTICAL BARS	●	○	○				●
7. PC-IN A-D CONVERTER APERTURE	●						
8. VIDEO-IN H. BLANKING PULSE	○	○	●				
9. VIDEO-IN PEDESTAL LEVEL	○	○	●				
10. VIDEO-IN GAIN	○	○	●				

● : *Required adjustment* ○ : *Check*

■ LIST OF REQUIRED INSTRUMENTS AND TOOLS (except those related to the personal computer)

Adjustment items	Oscillo-scope	PAL signal generator	PC signal generator	Light-meter	Color filter	Photo sensor	*No projection needed*
1. D-ILA COMMON DC	●			(●)		●	
2. PIXEL SHIFT			●				
3. D-ILA FRAME LUMINANCE			●				
4. GAMMA (GRADATION / WHITE BALANCE)			●	◎	◎		
5. SHADING (UNIFORMITY)				●	●		
6. 8-PHASE VERTICAL BARS							
7. PC-IN A-D CONVERTER APERTURE			●				
8. VIDEO-IN H. BLANKING PULSE	●	●					●
9. VIDEO-IN PEDESTAL LEVEL	●	●					●
10. VIDEO-IN GAIN	●	●					●

● : *Required* ◎ : *When factory service needed* ***"No projection needed"*** : Adjustments can be made without projection on the screen

■ DATA BACKUP

Before replacing major components such as PWB ASS'Ys, UNIT or BLOCK, be sure to backup the data contained in the set. In absence of data backup, complete adjustment becomes necessary.

- **DATA SAVE**
  1) Set for the stand-by mode.
  2) Click to select EEPROM of the adjustment software, and the [ROM data] menu opens.
  3) Click Receive ROM data to read the projector data.
  4) Click Save to save the data.
- **DATA ENTRY**
  1) Set to the stand-by mode.
  2) Click to select EEPROM of the adjustment software. The [ROM data] menu opens.
  3) Click Load to read the projector data to be saved.
  4) Click Transmit ROM data to write the data into the projector.

ADJUSTMENT PROCEDURE

1. D-ILA COMMON DC adjustment

Instruments	Oscilloscope Lightmeter [or Photoelectric conversion device]
Test point	Photoelectric conversion device output
Adjustment menu	<DDIC>
Preparation	Set running is to be finished

REPLAING COMPONENTS
- MAIN PWB ASS'Y
- DRIVE PWB ASS'Y
- OPTICAL BLOCK

(1) Open Menu DDIC, and click PM 0 and PM 1, then set those to Off.
(2) Open Menu DDIC DD_Ctrl, and click R Hide, G Hide and B Hide, then set those to On.
(3) Open Menu DDIC Blanking, and click R, then set BLACK to **127**.
(4) Connect the light output observing device to the oscilloscope and place in front of the lens where the most easy point to observe the flicker.
Note :Do not adjust under the lamp that flickers.
(5) Observe the light volume and after asking Menu DD_Ctrl R Com, Adjust to minimize the waveform amplitude with the oscilloscope coupling both of DC and AC.
(6) Set BLACK to **0**.
(7) Similarly, click G / B and set BLACK to **127**, then respectively adjust G Com and B Com.
(8) Open Menu DD_Ctrl, and click R Hide, G Hide and B Hide, then return those to Off.
Note :Large deviation of this adjustment can cause image flicker.
D-ILA device (element) burn can occur when out of adjustment.

2. PIXEL SHIFT adjustment

Instruments	SXGA signal generator [Cross hatch] Remote control unit
Test point	
Adjustment menu	<User Adjustment> <DDIC>
Preparation	

REPLAING COMPONENTS
- MAIN PWB ASS'Y
- OPTICAL BLOCK

(1) Supply a SXGA Cross hatch signal and project on the screen.
(2) Open Menu User Adjustment Set Up, and set Left side Right and Up side Down to Off.
(3) Click R / B, and adjust PXLSHFT0-1 to minimize the horizontal convergence error.
(4) Open Menu DDIC DD_Ctrl, and adjust R V SHIFT / B V SHIFT to minimize the vertical convergence error.

3. D-ILA FRAME LUMINANCE adjustment

Instruments	VGA signal generator [0% black]
Test point	
Adjustment menu	<DDIC>
Preparation	Finished D-ILA COMMON DC adjustment

REPLAING COMPONENTS
- MAIN PWB ASS'Y
- OPTICAL BLOCK

(1) Supply a VGA 0% black signal and project on the screen.
(2) Open Menu DDIC DD_Ctrl, adjust R Frame, G Frame and B Frame to minimize the luminance in the device frame area (frame of the image).

4. GAMMA adjustment

Note : Cannot be adjusted without a darkroom and lightmeter. If not available, do "4-2 GAMMA adjustment (FIELD SERVICE)".

4-1 GAMMA adjustment (FACTORY SERVICE)

Instruments	VGA signal generator [Gray scale] Lightmeter Color filter (R / G / B)	REPLAING COMPONENTS ● MAIN PWB ASS'Y ● POWER PWB ASS'Y ● LAMP BALLAST UNIT ● OPTICAL BLOCK
Test point		
Adjustment menu	<User Adjustment> <DDIC> <Gamma>	
Preparation	Finished D-ILA COMMON DC adjustment	

(1) **PREPARATION**

1) Set ZOOM to wide end.
2) Measure the illumination of the room with a calibrated lightmeter and keep it below 0.03 lx.
3) Put the lightmeter on the center of image.
(Set the distance from the projection lens to the lightmeter to approximate 30cm, then don't move those.)
4) Open menu User Adjustment, Picture and set Color Temp. to Middle.
5) Open Menu DDIC, and set GLUT, LUM, DYN, STC, IPM C and IPM 1 to Off.
6) Open Menu DDIC, DD_Ctrl, and click R Hide, G Hide and B Hide, then set those to On.
7) Open Menu Gamma, and select 17 Point.

(2) **G MAX CONTRAST MEASUREMENT**

1) Put the G color filter in front of the lightmeter.
2) Open Menu DDIC, DD_Ctrl, and click and make a note of the R Offset, G Offset and B Offset.
3) Set R Offset and B Offset to **255**.
4) Open Menu DDIC, Blanking, and click G, then set BLACK to **255**.
5) Open Menu DD_Ctrl, and adjust G Offset to maximum luminance and make a note as **Ymax**.
6) Open Menu Blanking, and click G, then set BLACK to **0**.
7) Adjust G Offset to minimum luminance and make a note as **Ymin**.

(3) **G ADJUSTMENT TARGET COMPUTATION**

1) Input G **Ymax** and G **Ymin** to the luminance table to compute the adjustment point 32 to 0 target adjustment values.

< LUMINANCE TABLE >

Adjustment point	G Ymax	G 1000	G 100and target against Ymax	G 0.97	R Ymax	R 500	R White balance offset	B Ymax	B 100	B 100and target against Ymax	B 0.97	B White balance offset
	[BLACK]	Signal level			[BLACK]	Signal level		[BLACK]	Signal level			
32	255	970.00000			255	485.000	1	255	97.0000			1
30	239	841.12147			239	466.822	1.11	239	86.6355			1.03
28	223	722.19427			223	436.928	1.21	223	77.2748			1.07
26	207	613.08134			207	395.437	1.29	207	67.4389			1.1
24	191	513.63753			191	356.978	1.39	191	57.5274			1.12
22	175	423.70837			175	313.544	1.48	175	48.3028			1.14
20	159	343.12867			159	269.356	1.57	159	40.4892			1.16
18	143	271.72063			143	225.528	1.66	143	32.8065			1.2
16	127	209.29147			127	172.666	1.85	127	25.1150			1.2
14	111	155.63021			111	127.617	1.64	111	18.6758			1.2
12	95	110.50331			95	89.508	1.62	95	13.5919			1.23
10	79	73.64834			79	59.655	1.62	79	9.0587			1.23
8	63	44.76438			63	36.259	1.62	63	5.5060			1.23
6	47	24.70675			47	19.149	1.55	47	2.9651			1.2
4	31	10.33401			31	10.209	1.25	31	1.7967			1.1
2	15	12.50630			15	6.566	1.05	15	1.2819			1.025
0	0	10.75000			0	5.375	1	0	1.0750			1

** The value of "Ymax" and "Signal level" is mentioned just as an example.*

■G

Ymin (Signal level = 0 / Offset = 255)	10
OP contrast	100.0
Adjst. contrast	93.0
0% adjst. target against Ymin	1.075

■R

Ymin (Signal level = 0 / Offset = 255)	5
OP contrast	100.0
Adjst. contrast	93.0
0% adjst. target against Ymin	1.075

■B

Ymin (Signal level = 0 / Offset = 255)	1
OP contrast	100.0
Adjst. contrast	93.0
0% adjst. target against Ymin	1.075

(4) **G LUMINANCE ADJUSTMENT**

- **0% LUMINANCE**

1) Open Menu DDIC Blanking, and click G , then set BLACK to **0**.
2) Open Menu DDIC DD_Ctrl, and adjust G Offset to Control Point No.0 computed value ±2%.

- **100% LUMINANCE**

1) Open Menu DDIC and confirm GIN is On .
3) Open Menu Blanking, and click G , then set BLACK to **255**.
2) Open Menu DDIC Gain , and uncheck [Only 1 Bar], then adjust Gain 1 to Gain 8 to Control Point No.32 computed value ±2%.

* **All Gain 1 to Gain 8 must be the same number.**

* **In case of the adjustment of Gain 1 to Gain 8 is not enough, adjust by the Gamma menu [Control Point No.32].**

- **94% - 6% LUMINANCE**

1) Open Menu DDIC Blanking, and click G , then set BLACK to **239**.
2) Open Menu Gamma, and click G , then adjust Y position value of the [Control Point No.30] to computed value ±2%.
3) Open Menu DDIC Blanking, and set BLACK to the [BLACK] value of the chart, open Menu Gamma, and adjust Y position value of all other Control Points from [No.28] to [No.2] computed value ±2%.

Note :Transmit the data at each Y value adjustment of the screen.

(5) **DATA RE-INPUT**

1) Open Menu DDIC DD_Ctrl, then return R Offset and G Offset to the values noted above.

(6) **R and B GAMMA ADJUSTMENT**

1) In the same manner as G, measure Ymax and Ymin, then compute the target values.
2) Adjust the luminance and do the data re-input.

(7) **AT THE END OF ADJUSTMENT**

1) Open Menu DDIC, and set GLUT , LUM , GAM , DYN and STC to On .
2) Open Menu DDIC DD_Ctrl, and click R Hide , G Hide and B Hide , then set those to Off .
3) Supply a VGA gray scale signal, and confirm normal gradation and white balance for each signal level.

4-2 GAMMA adjustment (FIELD SERVICE)

Instruments	VGA signal generator [Gray scale]	REPLAING COMPONENTS ● MAIN PWB ASS'Y ● POWER PWB ASS'Y ● LAMP BALLAST UNIT ● OPTICAL BLOCK
Test point		
Adjustment menu	<User Adjustment> <DDIC> <Gamma>	
Preparation	Finished D-ILA COMMON DC adjustment	

(1) Supply G only of VGA gray scale signal and project on the screen.
(2) Open Menu User Adjustment, Picture and set Color Temp to Middle .
(3) Open Menu DDIC DD_Ctrl, and click and make a note of the R Offset , G Offset and B Offset .
(4) Set R Offset and B Offset to **255**.
(5) Open Menu DDIC and set GLUT , LUM to Off .
(6) Open Menu Gamma, and select 17 Point.
(7) Open Menu Gamma, then select G and adjust each [Control Point No.28] to [Control Point No.2] for natural gradation at each signal level.

Note :Transmit the data for each Y position adjustment of the screen.

(8) Open Menu DDIC DD-Ctrl, then return R Offset and B Offset to the values noted above.
(9) Supply a VGA gray scale signal.
(10) Adjust R gamma and B gamma similarly as G gamma for natural white balance at each signal level.

Note :Transmit the data for each Y position adjustment of the screen.

(11) Open Menu DDIC and return GLUT , LUM to On .

5. SHADING adjustment

Instruments	Lightmeter Color filter (R / G / B)
Test point	
Adjustment menu	<User Adjustment> <Shading> <DDIC> <Area Shading>
Preparation	Finished D-ILA COMMON DC adjustment

REPLAING COMPONENTS
● MAIN PWB ASS'Y
● OPTICAL BLOCK

(1) **PREPARATION**

1) Open Menu User Adjustment, Set Up, and set Left side Right and Up side Down to Off.
2) Open Menu Shading, then set R, G and B of LUM to the default condition as Fig. 1 and click Transmit for RGB.
3) Set R, G and B of DYN to the default condition as Fig. 1 and click Transmit for RGB
4) Set R, G and B of STC to the default condition as Fig. 2 and click Transmit for RGB
5) Open Menu DDIC, and set SAM, STC, DYN, GIN to Off, and set LUM to On.

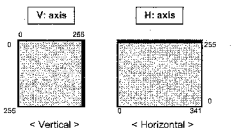


Fig. 1 [LUM] / [DYN] setting

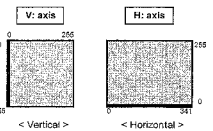


Fig. 2 [STC] setting

(2) **BLACK SHADING ADJUSTMENT**

1) Open Menu DDIC, and click IPM 0 and IPM 1, then set those to Off.
2) Open Menu DDIC, DD_Ctrl, and click R Hide, G Hide and B Hide, then set those to On.
3) Open Menu DDIC, Blanking, and set BLACK to **64** for R, G and B.
4) Open Menu Area Shading, and set [Offset] to **127** for R, G and B.
5) Open Menu Area Shading, and adjust to minimize the shading on the screen. (Fig. 3)
   * Click the frame of optional position to select an adjusting position, use the slide bar to select an adjusting level, and use [Cursor size] to select an adjusting range.
6) If required, open Menu Shading and click STC, then adjust the static shading on the screen. (Fig. 4)

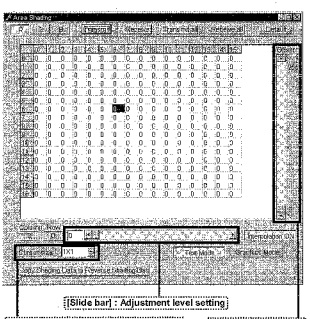


Fig. 4 < Area Shading > Menu

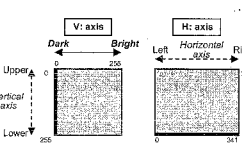


Fig. 3

(3) **WHITE SHADING ADJUSTMENT**

1) Open Menu DDIC Blanking, and set BLACK to **127** for R , G and B .
2) Open Menu Shading , click DYN and click G .
3) Vary the Y: data and interpolation of H-axis, and adjust to minimize the horizontal shading on the screen.
   Note :One of the [Y:] value of Right end, Center right, Center, Center left or Left end must be 255.
   Transmit the data at each adjustment.
4) Vary the Y: data and interpolation of V-axis, and adjust to minimize the vertical shading on the screen.
   Note :One of the [Y:] value of Right end, Center right, Center, Center left or Left end must be 255.
   Transmit the data at each adjustment
5) Select Menu Shading DYN , R and B , and adjust each of them as in the case of G so that the unevenness of color can be minimized.
   ∗ As occasion demands, make adjustments to minimize the unevenness of color by switching R , G and B respectively.

(4) **SCREEN CENTER LUMINANCE ADJUSTMENT**

1) Open Menu DDIC DD_Ctrl, and click and make a note of the R Offset , G Offset and B Offset.
2) Set R Offset and B Offset to **255**.
3) Set DYN and STC to Off .
4) Click R Hide , G Hide and B Hide , then set those to On .
5) Open Menu DDIC Blanking, then click G and set BLACK to **0**.
6) Put the G color filter in front of the lightmeter, then measure the screen center luminance.
7) Set BLACK to **127**.
8) Put the G color filter in front of the lightmeter, then measure the screen center luminance.
9) Set DYN and STC to On .
10) Set BLACK to **0**.
11) Open Menu DD_Ctrl, then G Offset adjust to almost same measured luminance level step 6).
12) Open Menu Blanking, then click G and set BLACK to **127**.
13) Open Menu DDIC Gain , uncheck [Only 1 Bar].
14) Adjust Gain 1 to Gain 8 to almost same measured luminance level step 8).
15) Open Menu DD_Ctrl, then return R Offset and B Offset to the values noted above.
16) In the same manner as G, adjust R and B.

(5) **AT THE END OF ADJUSTMENT**

1) If required, open Menu Shading and click LUM , then adjust the shading for optical.
2) Open Menu Shading and click Copy Shading Data to Reverse Shading Data .
3) Open Menu Area Shading and click Copy Shading Data to Reverse Shading Data .
4) Open Menu DDIC DD_Ctrl, and click R Hide , G Hide and B Hide , then set those to Off .

(6) **CEILING ADJUSTMENT**

1) Do all adjustment on the ceiling mount condition, if required.

6. 8-PHASE VERTICAL BARS adjustment

Instruments		**REPLAING COMPONENTS**
Test point		● **MAIN PWB ASS'Y**
Adjustment menu	**<DDIC>**	● **OPTICAL BLOCK**
Preparation		

(1) **PREPARATION**

1) Adjust the focus to get the best focus on the screen.
2) Open Menu DDIC, and set GAM, DYN to Off, and set LUM, IPM 0 and IPM 1 to Off .
3) Open Menu DDIC DD_Ctrl, then click and make a note of the R Offset, G Offset and B Offset.
4) Click R Hide, G Hide and B Hide, then set those to On.

(2) **G BLACK 8 BARS ADJUSTMENT**

1) Open Menu DDIC Blanking, then click G and set BLACK to **0**.
2) Open Menu DDIC DD_Ctrl, then adjust G Offset for observation of the vertical lines.
3) Open Menu DDIC Setup, then click G and adjust SETUPA 1 - SETUPA 8 to cancel the vertical lines.
Note :For observation of the vertical line's correspondence, change SETUPA 1 value higher.

(3) **G WHITE 8 BARS ADJUSTMENT**

1) Open Menu DDIC Blanking, then click G and set BLACK to **200**.
2) Open Menu DDIC DD_Ctrl, then adjust G Offset for observation of the vertical lines.
3) Open Menu DDIC Setup, then click G and adjust SETUPA 1 - SETUPA 8 to cancel the vertical lines.
Note :For observation of the vertical line's correspondence, change SETUPA 1 value lower.

(4) **R and B ADJUSTMENT**

1) In the same manner as G, adjust R and B.

(5) **DATA INPUT and CONFIRMATION**

1) Supply a VGA gray scale signal, and confirm good condition for each signal level and hole screen.
2) Open Menu DDIC DD_Ctrl, then return R Offset, G Offset and B Offset to the values noted above.
3) Click R Hide, G Hide and B Hide, then return those to Off.
4) Open Menu DDIC, and return LUM to On .

7. PC-IN A-D CONVERTER APERTURE check

Instruments	**VGA signal generator [Gray scale : 0.7V(p-p)]** *** Show at least 2 images on 1 screen** **(Upper scale and Lower scale must be reversed)**	**REPLAING COMPONENTS** ● **MAIN PWB ASS'Y**
Test point		
Adjustment menu	**<User Adjustment>**	
Preparation		

(1) Supply a VGA gray scale signal and project on the screen.

(2) Open Menu User Adjustment Ctrl , and click All Quick Alignment.

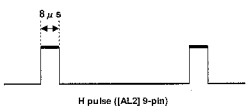
(3) Display message Optimize gain and offset value in A/D converter, OK?, then click Yes.

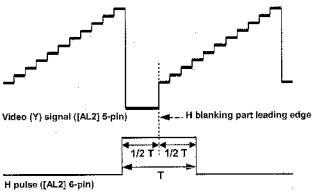
* Automatic adjustments are in progress. It takes several seconds to complete the adjustments.

8. VIDEO-IN H. BLANKING PULSE adjustment

Instruments	PAL signal generator [Gray scale] Oscilloscope	REPLAING COMPONENTS ● VIDEO PWB ASS'Y
Test point	AL2 connector 9-pin / 5-pin / 6-pin [MAIN PWB ASS'Y]	
Adjustment menu	<AV>	
Preparation		

(1) Supply a PAL gray scale signal and project on the screen.
(2) Connect the oscilloscope to MAIN PWB ASS'Y [AL2] connector 9-pin [FBP IN]. (✻ ground at 8-pin)
(3) Open Menu AV EVR1 and adjust HPOS W to set the H pulse width to 8μs.
(4) Connect the oscilloscope to MAIN PWB ASS'Y [AL2] connector 5-pin [Y-IN] and 6-pin [NT/H_OUT]. (✻ ground at 8-pin)
(5) Observe the 2 waveforms with the oscilloscope at H-rate, and adjust HPOS T to set the pulse timing as figure below.

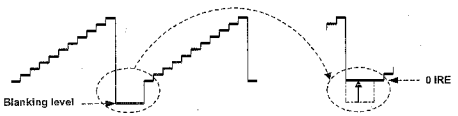




9. VIDEO-IN PEDESTAL LEVEL adjustment

Instruments	PAL signal generator [Gray scale : include 0 IRE level] Oscilloscope	REPLAING COMPONENTS ● VIDEO PWB ASS'Y
Test point	AL2 connector 4-pin [MAIN PWB ASS'Y]	
Adjustment menu	<AV>	
Preparation		

(1) Supply a PAL gray scale signal and project on the screen.
(2) Connect the oscilloscope to MAIN PWB ASS'Y [AL2] connector 4-pin [M-Y]. (✻ ground at 3-pin)
(3) Open Menu AV DECODE, and adjust DC T RATE to the blanking level to the same level as 0 IRE.

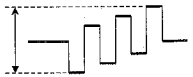


10. VIDEO-IN GAIN adjustment

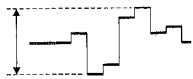
Instruments	PAL signal generator [Color bar] Oscilloscope	REPLAING COMPONENTS ● VIDEO PWB ASS'Y
Test point	AL2 connector 4-pin / 2-pin / 1-pin [MAIN PWB ASS'Y]	
Adjustment menu	<AV>	
Preparation		

(1) Supply a PAL color bar signal and project on the screen.
(2) Connect the oscilloscope to MAIN PWB ASS'Y AL2 connector 4-pin [M-Y], 2-pin [M-BY] and 1-pin [M-RY]. (※ ground at 3-pin)
(3) Open Menu AV, EVR 1.
(4) Adjust Y VOL, YB VOL and YR VOL to the waveform p-p value as the table.

Y signal ([AL2] 4-pin)



B-Y signal ([AL2] 2-pin)



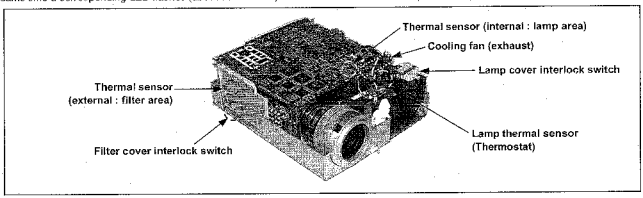
R-Y signal ([AL2] 1-pin)

Adjustment signal	Adjustment item	Test point	Setting voltage
Y	Y VOL	[AL2] 4-pin	**0.47V(p-p)**
B-Y (PB)	YB VOL	[AL2] 2-pin	**0.65V(p-p)**
R-Y (PR)	YR VOL	[AL2] 1-pin	**0.65V(p-p)**

TROUBLESHOOTING

PROTECTIVE SENSOR AND PROTECTIVE SWITCH

In event of abnormal operation due to circuit or component failure, setting error or other reason, in order to prevent serious damage to the set and preserve the integrity of peripheral equipment, sensors and switches are provided for protective functions. Cooling is conducted at the same time a corresponding LED flashes (about 90 seconds). The LED indication with respect to the protective function is described below.


Thermal sensor (internal : lamp area)
Cooling fan (exhaust)
Lamp cover interlock switch
Thermal sensor (external : filter area)
Lamp thermal sensor (Thermostat)
Filter cover interlock switch

1. PROTECTIVE SENSOR

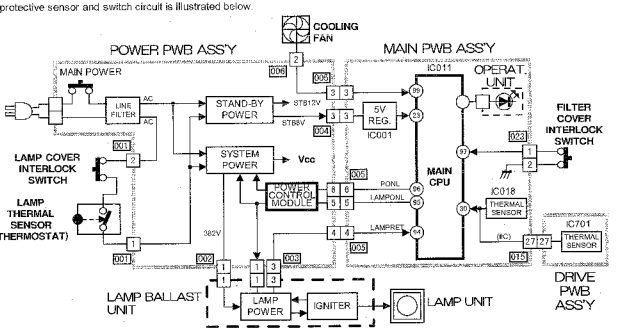
Type	Monitor objective	Location	Operating point	Function
Thermal sensor (Thermostat)	Lamp unit	Optical block (lamp section)	120°C	AC line (one side) open
Thermal sensor (IC)	Set interior (lamp area)	MAIN PWB ASS'Y IC018	72°C	Power off by main CPU (via emergency mode, stand-by mode produced)
Thermal sensor (IC)	Set exterior (filter area)	DRIVE PWB ASS'Y IC701	55°C	Power off by main CPU (via emergency mode, stand-by mode produced)
Motor operation detection circuit	Cooling fan (exhaust)	Cooling fan interior	Fan stop	Power off by main CPU (via emergency mode, stand-by mode produced)

2. PROTECTIVE SWITCH

Type	Monitor objective	Location	Operating point	Function
Interlock switch	Lamp cover	Optical block (lamp section)	Switch open	AC line (one side) open
Interlock switch	Filter cover	Bottom chassis (filter section)	Switch open	Power off by main CPU (via emergency mode, stand-by mode produced)

3. BLOCK DIAGRAM

The protective sensor and switch circuit is illustrated below.



LED (INDICATOR) WARNING INDICATIONS

1. LED INDICATION CONTENTS

If an abnormality occurs during operation (projection), the content of the problem can be determined from flashing LED indicators. When an LED indicates, operation (projection) automatically stops and the cool-down mode (about 90 seconds) is entered (except for No.1, No.3, No.4, No.5 and No.8), then the stand-by mode.

No.	Flashing LED				Flash time	Warning cause (projector mode)
	LAMP	TEMP	STAND BY	OPERATE		
1	●		●		0.5s	Lamp not lighted, cannot project
2	●			●	0.5s	Lamp extinguishes during projection Lamp use time exceeds 2010 hours
3	●	●			0.5s	Sub CPU circuit error
4	●	●			0.25s	Device drive circuit error
5	○	○			0.5s	Video process circuit (decoder) error
6	○	○			0.25s	Video system error after data initializing
7			●	●	0.5s	Filter cover dislodged (removed)
8		●			0.5s	Set interior abnormally hot
9		●	●		0.5s	Air intake temperature too high (exterior temperature abnormal)
10	●	●	●	●	0.5s	Set internal cooling fan stopped (fan locked)
11	●				0.5s	Lamp use time exceeds 2000 hours

●: Always flashes during operation ○: Alternately flash during operation **Flash time**: lighted/extinguished time (each LED lighted time)

2. MEASURES DURING ABNORMALITY

In event of the following, be sure to cut the main power or disconnect the power cord from the AC outlet, and reset the projector mode.

No.	Abnormality	Mode	Measure	Mode	Cause
1	Lamp does not light	→	Again supply power (press OPERATE button)	OK	Lamp lighting failure
		NG	Check lamp use does not exceed 2000 hours	YES	Lamp use inhibited
		NO	Replace lamp unit	OK	Lamp defective
		NG	Replace LAMP BALLAST unit	OK	Igniter circuit faulty
2	Lamp extinguishes during projection	→	Revise installation mode (protect from shock, vibration, etc.)	OK	Installation mode (environment) unfavorable
		NG	Replace lamp unit	OK	Lamp defective
	Lamp use time exceeded	→	Replace lamp and reset the lamp use time	OK	Lamp use inhibited
3	Sub CPU operation faulty	→	Again supply power (press MAIN POWER button)	OK	Circuit operating error
		NG	Replace MAIN PWB ASS'Y	OK	Sub CPU failure
4	DD circuit operation faulty	→	Again supply power (press OPERATE button)	OK	Circuit operating error
		NG	Replace MAIN PWB ASS'Y	OK	Device drive circuit failure
5	Decoder operation faulty	→	Again supply power (press OPERATE button)	OK	Circuit operating error
		NG	Replace MAIN PWB ASS'Y	OK	Video process circuit failure
6	Video system data initializing error	→	Again supply power (press OPERATE button)	OK	Operating (loading) error
7	Filter cover removed	→	Carefully reinstall the filter cover	OK	Filter cover installation faulty
		NG	Reinstall 023 connector	OK	Connector installation faulty
		NG	Replace filter cover interlock switch	OK	Switch faulty
		NG	Replace MAIN PWB ASS'Y	OK	Defect in PWB ASS'Y
8	Internal temperature abnormally high	→	Avoid obstructing ventilation openings (intake and exhaust)	OK	Circuit error or other fault
		NG	Replace MAIN PWB ASS'Y	OK	Defective sensor and detection circuit
9	External temperature abnormally high	→	Adjust ambient temperature to within specified range	OK	Circuit error or other fault
		NG	Replace DRIVE PWB ASS'Y	OK	Defective sensor and detection circuit
10	Cooling fan stopped	→	Reinstall 006 connector	OK	Connector installation defective
		NG	Reinstall 005 connector	OK	Connector installation defective
		NG	Replace cooling fan	OK	Cooling fan defective
		NG	Check POWER PWB ASS'Y detection circuit (Q815, Q816, etc.)	OK	Detection circuit defective
		NG	Replace MAIN PWB ASS'Y	OK	Defect in PWB ASS'Y

ERROR LOG (SELF-DIAGONOSIS RECORD AND INDICATION)

1. OUTLINE

By using the special setting and adjustment software, data related to abnormal operation (history) stored in the projector can be load. On the basis of contents " LED (INDICATOR) WARNING INDICATIONS ", set and lamp use time, internal and external temperature, and other data prior to the previous usage time can be viewed as a table.

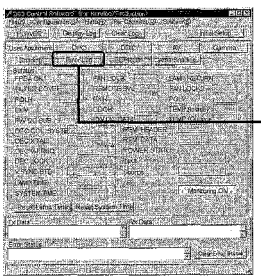


Fig. 1 Start screen (main menu)

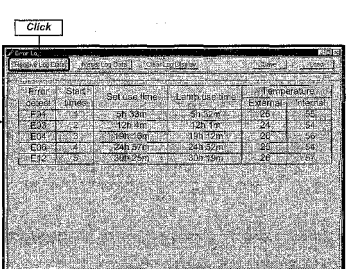


Fig. 2 < Error log > screen

● READING

1) Install the software in a personal computer and connect by RS-232C terminal (use cross cable).
2) Set the projector to stand-by mode.
3) Start the setting and adjustment software. The main menu shown in Fig. 1 appears.
4) Click the [Error Log] button to show the screen indicated in Fig. 2.
5) Click the [Receive Log Data] button to display the history.

● <ERROR LOG> SCREEN ITEMS

Item	Description
Error detect	Error event code (13 types)
Start times	Number of times operation mode reached
Set use time	Total time in operation mode until present
Lamp use time	Total lamp lighted time until present
External temperature	External temperature detected by sensor during error event
Internal temperature	Internal temperature detected by sensor during error event

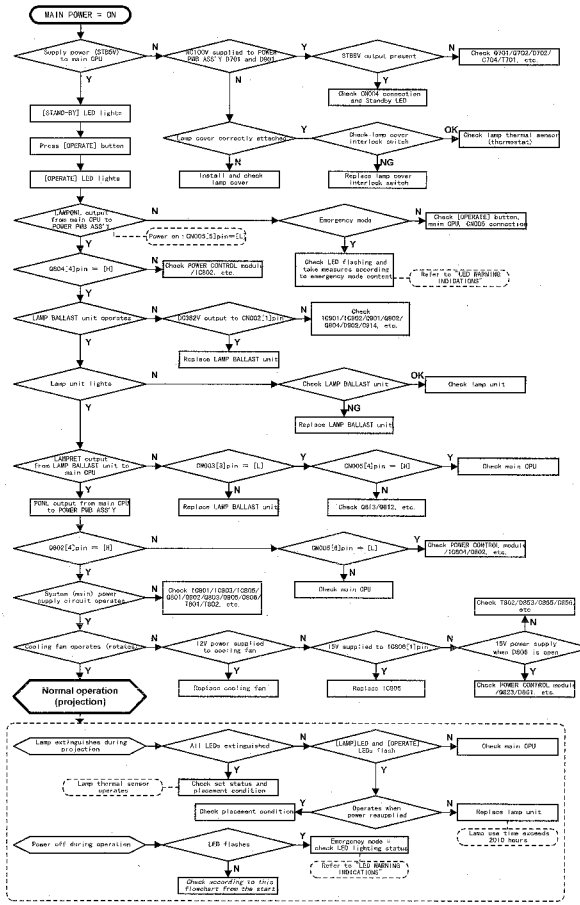
2. ERROR CODE

Error code	Detected condition	Flashing LED	Operation mode
E01	Lamp cannot light during shift from stand-by to operation mode	STAND BY + LAMP	Stand-by
E02	Lamp use time exceeds warranty (2000 hours)	LAMP	Emergency
E03	Inter IC bus communication error (ACK receive error)	*absent*	
E04	Filter cover dislodged (removed)	STAND BY + OPERATE	Emergency
E06	Lamp extinguishes during projection	OPERATE + LAMP	Stand-by
E07	Cooling fan stops (fan lock)	All (4 LEDs)	Emergency
E08	Set internal temperature (lamp area) abnormally high	TEMP	Emergency
E09	Set external temperature (ventilation intake openings) abnormally high	STAND BY + TEMP	Emergency
E0B	Error in video process circuit (decoder) operation	LAMP + TEMP (alternating)	Stand-by
E0C	Video system data initializing error	LAMP + TEMP (alternating, high speed)	Stand-by
E11	Error in device drive circuit operation	LAMP + TEMP	Stand-by
E12	Device drive circuit operation	LAMP + TEMP (high speed)	Stand-by
E20	Sleep time (no signal power off) function produces stand-by mode	STAND BY	Stand-by

3. FUNCTIONS

Button (item)	Function	Data process
Receive Log Data	Receive data stored in projector and display <Error log> screen	Projector to PC
Reset Log Data	Delete all data stored in projector (reset)	Projector internal
Clear Log Display	Delete record (history) shown on <Error log> screen (delete computer side)	PC internal
Save	Save record (history) shown on <Error log> screen to file	PC internal
Load	Read record (history) stored in PC and display in <Error log> screen	PC internal

POWER SUPPLY SYSTEM CHECK PROCEDURE



DLA-G3010ZGU / DLA-G3010ZGE STANDARD CIRCUIT DIAGRAM

CONTENTS

■ NOTE ON USING CIRCUIT DIAGRAMS 2-1
■ WIRING DIAGRAM 2-3
■ BLOCK DIAGRAM 2-5
■ CIRCUIT DIAGRAMS AND PWB PATTERNS

PWB's name	PWB ASS'Y No.	diagram	pattern
POWER PWB ASS'Y	SXG-9001A	2-7	2-10
POWER CONTROL MODULE	SXG-0P001A	2-7 (Reference)	(No entry)

NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the ⚠symbol and shading are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1) Input signal : Color bar signal (VGA : 640 × 480)
(2) Setting positions of each knob / button and variable resistor : Original setting position when shipped
(3) Internal resistance of tester : DC 20kΩ / V
(4) Oscilloscope sweeping time : H ⇒ 20μs / div
: V ⇒ 5ms / div
: Others ⇒ Sweeping time is specified
(5) voltage values : All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustment, use them as reference values.

3. INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board : R1209 → R209

4. INDICATIONS ON THE CIRCUIT DIAGRAM

(1) Resistors

●Resistance value

No unit	: [Ω]
K	: [kΩ]
M	: [MΩ]

●Rated allowable power

No indication	: 1/6 [W]
Others	: As specified

●Type

No indication	: Carbon resistor
OMR	: Oxide metal film resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
UNFR	: Uninflammable resistor
FR	: Fusible resistor

* Composition resistor 1/2[W] is specified as 1/2S or COMP.

(2) Capacitors

●Capacitance value

1 or higher	: [pF]
less than 1	: [μF]

●Withstand voltage

No indication	: DC50 [V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

※Electrolytic Capacitors [Example]

47/50 : Capacitance value[μF] / withstand voltage[V]

●Type

No indication	: Ceramic capacitor
MY	: Mylar capacitor
MM	: Metallized Mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metallized polypropyiene capacitor
MF	: Metallized film capacitor
TF	: Tin film capacitor
BP	: Bipolar electrolytic capacitor
TAN	: Tantalum capacitor

(3) Coils

No unit	: [μH]
Others	: As specified

(4) Power Supply

: B1 (130V)
: B2 (12V)
: 5V

* Respective voltage values are indicated

(5) Test Point

: Test point
: Only test point display

(6) Connecting Method

: Connector
: Wrapping or soldering
: Receptacle (On the PWB)
: Receptacle (On the wire)

(7) Ground Symbol

⊥ : LIVE side ground
⏚ : ISOLATED (NEUTRAL) side ground [analog circuit]
⏚ : EARTH ground
⏚ : ISOLATED (NEUTRAL) side ground [digital circuit]

5. NOTE FOR REPAIRING SERVICE

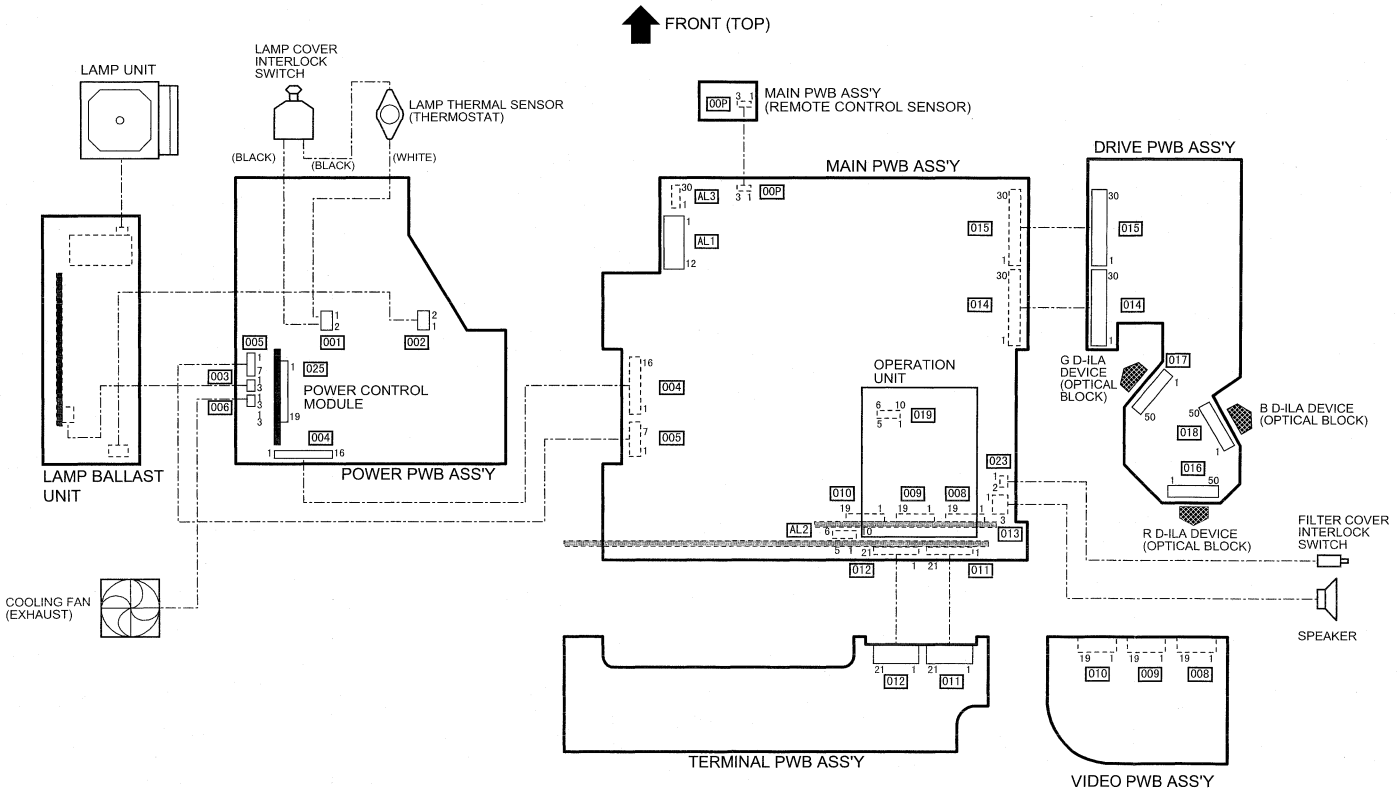
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED (NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED (NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

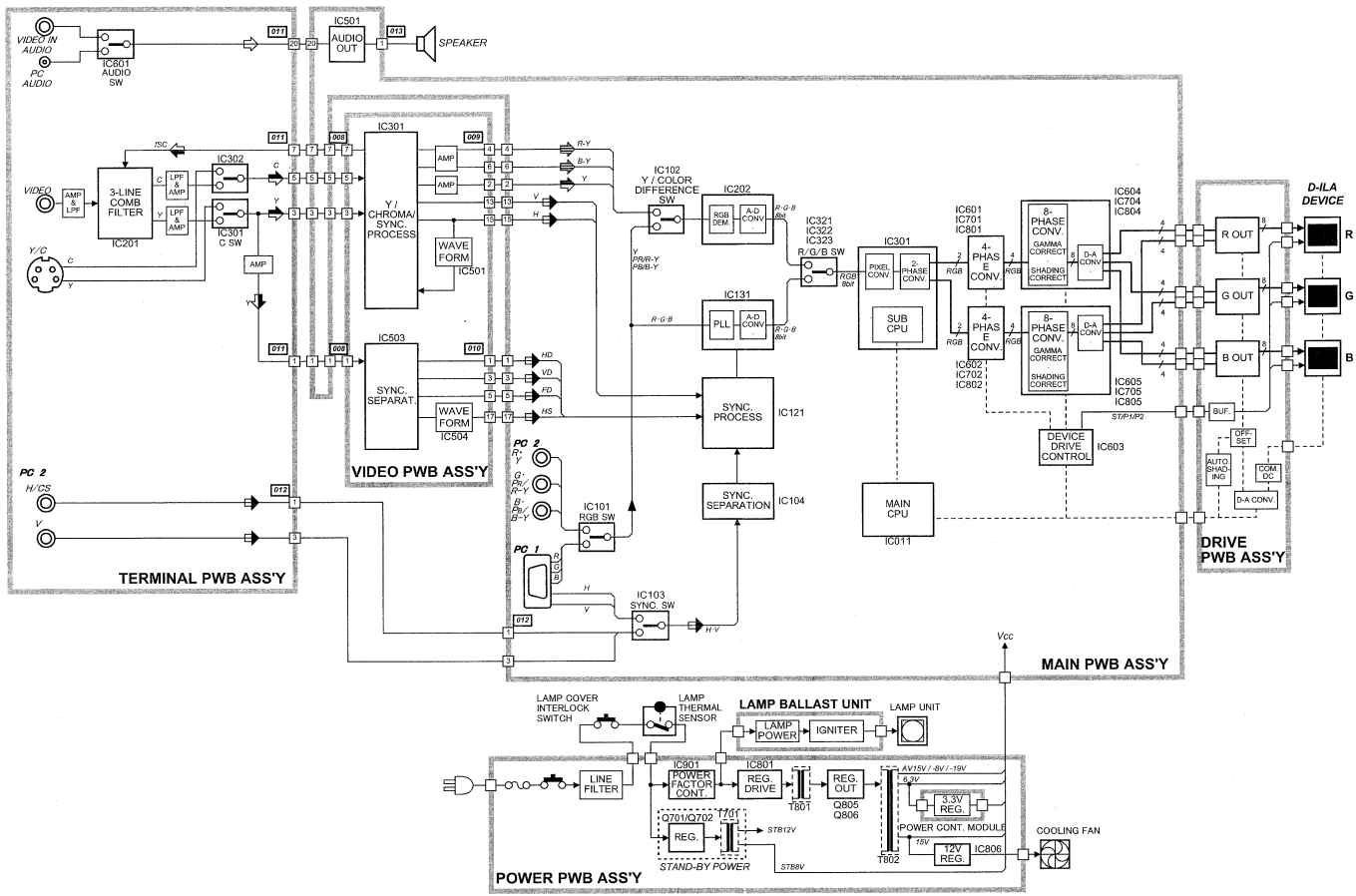
(2) Do not short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED (NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

WIRING DIAGRAM

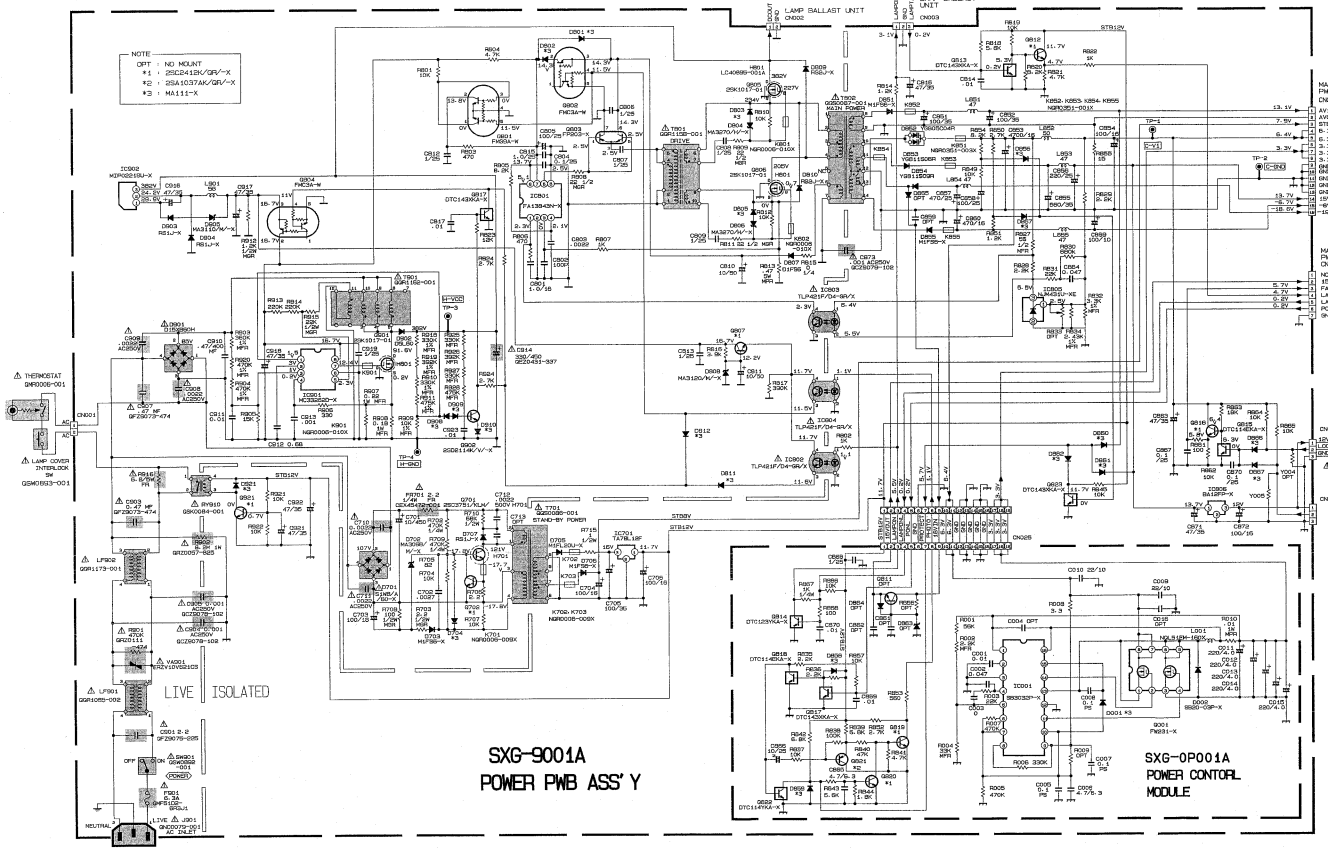


BLOCK DIAGRAM



CIRCUIT DIAGRAMS & PWB PATTERNS

【 MAIN POWER PWB CIRCUIT DIAGRAM 】

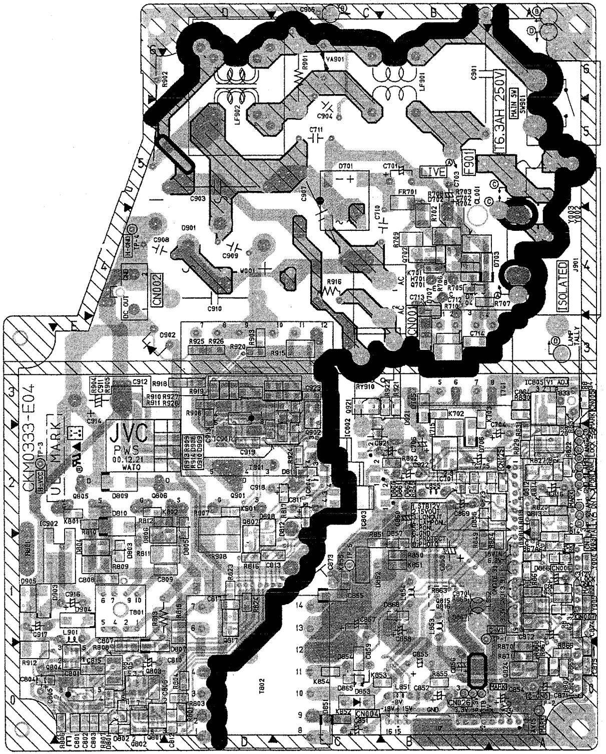


DLA-G3010ZGU
DLA-G3010ZGE

【 POWER PWB PATTERN 】

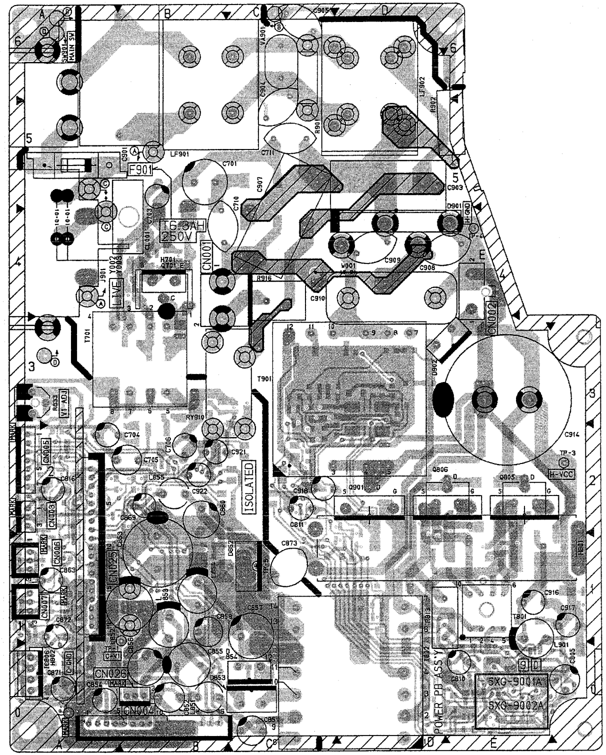
< A SIDE >

< FRONT >



< B SIDE >

< FRONT >



【 POWER PWB VOLTAGE VALUES 】

■ LIVE SIDE

Symbol No.	Pin	OPERATE	STAND-BY
CN002	1	382	133
D701	+	107	132
D901	+	85	119
Q701	B	-17.8	4
	C	121	132
	E	-17.7	4.1
Q702	B	-24	4.2
	C	-17.8	4
	E	-17.8	4.1
Q801	1	0	0
	2	13.8	0
	3	0	0
	5	11.5	0
Q802	2	14.3	-1.1
	3	14.3	0
	4	11.5	0
Q803	1	2.5	0
	3	2.5	0
	5	2.5	0
	6	14.3	0
Q804	2	16.7	11.9
	3	16.7	16.7
	4	11.1	11.3
Q805	G	227	1
	D	382	133
	S	234	1以上
Q806	G	0.7	0
	D	205	1以上
	S	0	0
Q807	B	12.2	11.9
	C	16.7	16.7
	E	11.7	11.3
Q901	G	12.4	0
	D	91.6	133
	S	0.2	0
IC801	1	2.3	0.1以上
	3	0	0
	4	2.1	0
	5	0	0
	6	2.5	0
	7	13.7	0
	8	5.1	0
IC901	1	1.5	0.6
	2	3	0.2
	3	1	1.5
	4	0.2	0
	5	2.3	0
	7	12.4	0
	8	16.7	0
IC902	1	29.9	25.1
	2	24.2	19.5
	3	382	134

■ ISOLATED

Symbol No.	Pin	OPERATE	STAND-BY
CN003	1	3.1	0
	3	0.2	5.8
CN005	3	5.7	2.5
	4	4.7	0
	5	0.2	4.9
	6	0.2	5
CN025	3	5.5	0
	4	0.2	4.9
	5	0.2	5
	7	5.7	0
	8	1.1	0.1
Q812	B	5.3	0
	E	4.7	0
Q813	B	0.2	5.8
	C	5.3	0
Q815	B	0	0.3
	E	6.3	0.7
Q816	B	6.3	0.7
	E	5.8	0.7
Q823	B	0	0.1
	C	11.7	11.7
IC802	1	1.1	0
	3	11.6	-1.2
	4	11.7	11.4
IC803	1	6.4	0.7
	2	5.5	0.7
	4	2.3	0.1
IC804	1	1.1	0.1
	3	11.5	0
	4	11.7	11.4
IC805	1	2.5	0.3
	3	5.5	0.7

※ [3]/[4] pin of IC802 / IC803 / IC804 is isolated side.

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metallized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metallized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metallized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metallized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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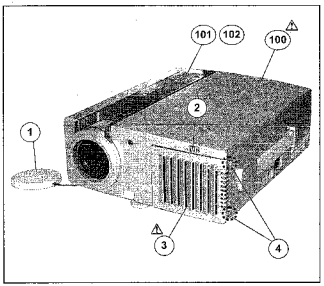
USING P.W. BOARD & REMOTE CONTROL UNIT

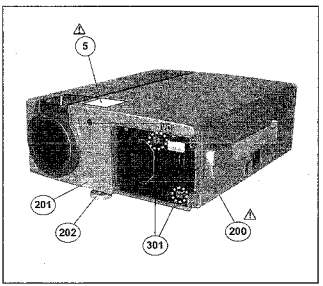
Model / P.W.B ASS'Y	DLA-G3010ZGU	DLA-G3010ZGE
MAIN P.W.B ASS'Y	SXG-1001A	←
DRIVE P.W.B ASS'Y	SXG-3002A	←
POWER P.W.B ASS'Y	SXG-9001A	←
TERMINAL P.W.B ASS'Y	SXG-0J001A	←
POWER CONTROL MODULE	SXG-0P001A	←
VIDEO P.W.B ASS'Y	SXG-0V001A	←
REMOTE CONTROL UNIT	RM-M3010G-2	←

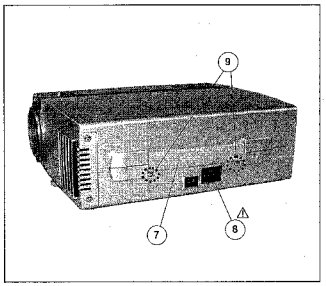
EXPLODED VIEW PARTS LIST

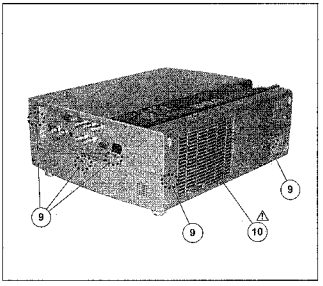
⚠	Ref No.	Part No.	Part Name	Description
	1	LC31296-001E	CAP ASSY	
	2	PGD3001-2	JVC MARK	
⚠	3	LC31294-001D	LAMP COVER ASSY	
	4	QYSBSG3010Z	TAPPING SCREW	(×2)For LAMP COVER
⚠	5	LC31322-001B	LABEL(LENZ)	
⚠	6	LC31319-001A	LABEL(CAUTION)	
	7	LC41003-001A	HANDLE ASSY	
⚠	8	LC31320-001A	AC INLET HOLDER	
	9	QYSDSP4010N	SCREW	(×7)
⚠	10	LC31295-001B	FAN COVER ASSY	
⚠	11	LC31323-001B	RATING LABEL	
⚠	12	LC31428-001A	TERMINAL BOARD ASSY	
	13	QNB00037-001	RETAINER	(×2)
	14	QYSDSP3008N	SCREW	(×3)
	15	QNB00081-001	NAT	(×2)
⚠	16	LC20664-001A	LENZ COVER	
⚠	17	QSW0893-001	PUSH SWITCH	
⚠	18	SXG-1001A	MAIN PWB	
⚠	19	QAL0258-001	OPERATION UNIT	
	20	LC31470-001B	OPE BUTT SPEASER	
⚠	21	SXG-0J001A	TERMINAL PWB	
⚠	22	SXG-0V001A	VIDEO PWB	
⚠	24	----------	POWER PWB	(SXG-9001A)
⚠	25	SXG-0P001A	POWER CONTROL MODEULE	
⚠	26	QAL0257-002	LAMP BALLAST UNIT	
⚠	27	SXG-3D02A	DRIVE PWB	
⚠	28	G3D10-OPSA	OPTICAL BLOCK ASSY	
⚠	29	QAS0058-001	SPEAKER	
⚠	30	QMR0006-001	TH PROTECTOR	
⚠	31	QAR0181-001	FAN MOTOR	
⚠	100	LC20661-001E	TOP COVER ASSY	Inc.No.101~No.103
	101	LC31310-001B	BUTTON	
	102	LC31308-001B	BUTTON HOLDER	
⚠	200	LC20659-001C	BOTTON COVER ASSY	Inc.No.201~No.203
	201	QSW0701-001	PUSH SWITCH	
	202	LC31349-001C	FOOT	
	203	LC31254-001B	FOOT	
⚠	300	BHL5005-SG	LAMP UNIT	(SERVICE)Inc.No.301
	301	LC40374-001A	SCREW(COIN)	(×2)

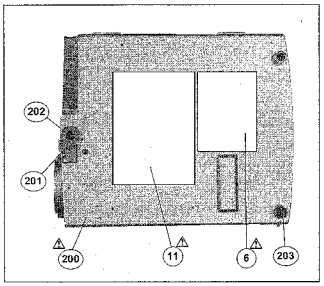
EXPLODED VIEW

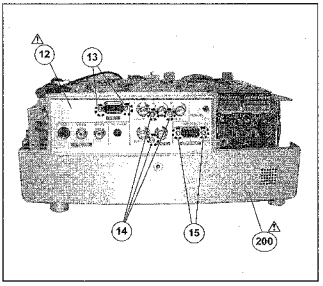


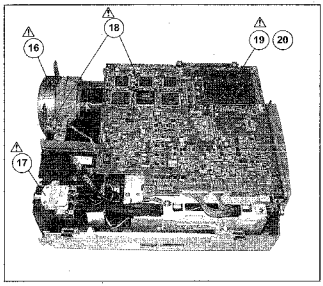








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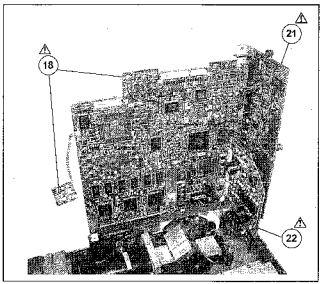
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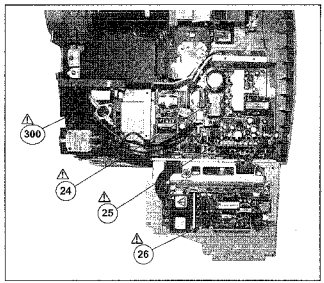
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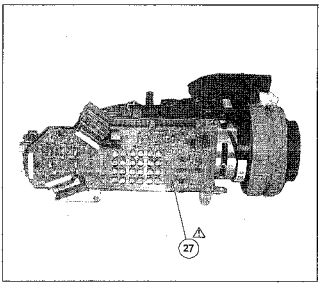
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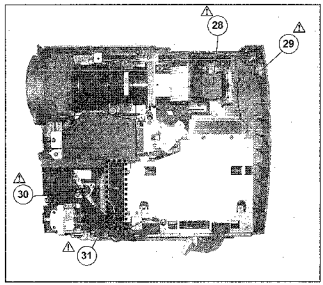
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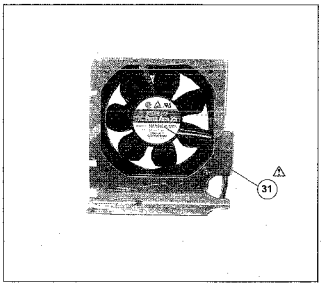
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PRINTED WIRING BOARD PARTS LIST

■MAIN P.W. BOARD ASS'Y (SXG-1001A)

The following PW boards are supplied as assemblies.
The component parts on the PC board are available only when the parts are listed in the "PRINTED CIRCUIT BOARD PARTS LIST".

△	Symbol No.	Part No.	Part Name	Description
	OTHERS			
	J1001	QMS3009-C01		3.5 JACK
	J1101	QNZD102-001		D SUB CONNECTOR
	J1102	QNZ0154-001		BNC CONNECTOR

■DRIVE P.W. BOARD ASS'Y (SXG-3002A)

The following PW boards are supplied as assemblies.

■POWER P.W. BOARD ASS'Y (SXG-9001A)

△	Symbol No.	Part No.	Part Name	Description	
	RESISTOR				
	R9702	NRS144J-474K	MG R	470kΩ 1/2W	J
	R9703	NRS128J-2R2K	MG R	2.2 Ω 1/2W	J
	R9704	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9705	NRSA02J-820X	MG R	82Ω 1/10W	J
	R9706	NRSA02J-2R2Y	MG R	2.2Ω 1/10W	J
	R9707	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9708	NRS128J-101Y	MG R	100 Ω 1/2W	J
	R9709	NRS144J-474K	MG R	470kΩ 1/2W	J
	R9715	NRS128J-1R0W	MG R	1.0 Ω 1/2W	J
	R9801	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9802	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R9803	NRSA02J-471X	MG R	470Ω 1/10W	J
	R9804	NRSA02J-472X	MG R	4.7kΩ 1/10W	J
	R9805	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R9806	NRSA02J-471X	MG R	470Ω 1/10W	J
	R9807	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R9808-09	NRS128J-220W	MG R	22 Ω 1/2W	J
	R9810	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9811	NRS128J-220W	MG R	22 Ω 1/2W	J
	R9812	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9813	QRM0598-R47	MF R	0.47Ω 5W	J
	R9814	NRSA02J-122X	MG R	1.2kΩ 1/10W	J
	R9815	NRS144J-000X	MG R	0.0 Ω 1/4W	J
	R9816	NRSA02J-392X	MG R	3.9kΩ 1/10W	J
	R9817	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9818	NRSA02J-562X	MG R	5.6kΩ 1/10W	J
	R9819	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9820	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R9821	NRSA02J-472X	MG R	4.7kΩ 1/10W	J
	R9822	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R9823	NRSA02J-123X	MG R	12kΩ 1/10W	J
	R9824	NRSA02J-272X	MG R	2.7kΩ 1/10W	J
	R9827	NRS128J-560W	MG R	56 Ω 1/2W	J
	R9828-29	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R9830	NRSA02J-684X	MG R	680kΩ 1/10W	J
	R9831	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R9832	NRSA02F-332X	MG R	3.3kΩ 1/10W	F
	R9834	NRSA02F-2431X	MG R	2.43kΩ 1/10W	F
	R9845	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9849	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9850	NRSA02J-272X	MG R	2.7kΩ 1/10W	J
	R9851	NRSA02J-122X	MG R	1.2kΩ 1/10W	J
	R9854	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
△	R9855	NRSA02J-150X	MG R	15Ω 1/10W	J
	R9861	NRSA02J-101X	MG R	100Ω 1/10W	J
	R9862	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9863	NRSA02J-183X	MG R	18kΩ 1/10W	J
	R9864-65	NRSA02J-103X	MG R	10kΩ 1/10W	J

△	Symbol No.	Part No.	Part Name	Description	
	RESISTOR				
△	R9901	QRZ0111-474	C R	470kΩ 1/2W	K
△	R9902	QRZ0057-825	C R	8.2MΩ 1W	J
	R9903	NRSA02F-364X	MG R	360kΩ 1/10W	F
	R9904	NRSA02F-474X	MG R	470kΩ 1/10W	F
	R9905	NRSA02J-153X	MG R	15kΩ 1/10W	J
	R9906	NRSA02J-331X	MG R	330Ω 1/10W	J
	R9907	NRS035J-R22X	MG R	0.22 Ω 1W	J
	R9908	NRS016J-R18X	MG R	0.18 Ω 1W	J
	R9909	NRSA02F-103X	MG R	10kΩ 1/10W	F
	R9910	NRSA02F-334X	MG R	330kΩ 1/10W	F
	R9911	NRSA02F-4753X	MG R	475kΩ 1/10W	F
	R9912	NRS128J-122W	MG R	1.2kΩ 1/2W	J
	R9913-14	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R9915	NRS128J-223W	MG R	22kΩ 1/2W	J
△	R9916	QRZ9050-6R8	F R	6.8 Ω 5W	J
	R9918	NRSA02F-334X	MG R	330kΩ 1/10W	F
	R9919	NRSA02F-3923X	MG R	392kΩ 1/10W	F
	R9920	NRSA02F-474X	MG R	470kΩ 1/10W	F
	R9921-22	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R9924	NRSA02J-272X	MG R	2.7kΩ 1/10W	J
	R9925	NRSA02F-334X	MG R	330kΩ 1/10W	F
	R9926	NRSA02F-3923X	MG R	392kΩ 1/10W	F
	R9927	NRSA02F-334X	MG R	330kΩ 1/10W	F
	R9928	NRSA02F-4753X	MG R	475kΩ 1/10W	F
	CAPACITOR				
	C9701	QERH2GM-106Z	E CAP.	10μF 400V	M
	C9702	MCB21KK-272X	C CAP.	2700pF 50V	K
	C9703-04	QERH1CM-107Z	E CAP.	100μF 16V	M
	C9705	QERH1VM-107Z	E CAP.	100μF 35V	M
	C9706	QERH1CM-107Z	E CAP.	100μF 16V	M
△	C9710	QCZ9078-222	C CAP.	2200pFAC250V	M
△	C9711	QCZ9078-222	C CAP.	2200pFAC250V	M
	C9801	MCF22CZ-103X	C CAP.	1μF 16V	Z
	C9803	MDC21H1-101X	C CAP.	100pF 50V	J
	C9803	MCB21KK-222X	C CAP.	2200pF 50V	K
	C9804	MCB21EK-104X	C CAP.	0.1μF 25V	K
	C9805	QERH1EM-107Z	E CAP.	100μF 25V	M
	C9806-09	MCF11EC-105X	C CAP.	1μF 25V	Z
	C9810-11	QERH1HM-106Z	E CAP.	10μF 50V	M
	C9812-13	MCF11EZ-105X	C CAP.	1μF 25V	Z
	C9814	MCB21HK-103X	C CAP.	0.01μF 50V	K
	C9815	MCF11EZ-105X	C CAP.	1μF 25V	Z
	C9816	QERH1VM-476Z	E CAP.	47μF 35V	M
	C9817	MCB21HK-103X	C CAP.	0.01μF 50V	K
	C9851-52	QERH1VM-107Z	E CAP.	100μF 35V	M
	C9853	QTM11CK-476	E CAP.	4700μF 16V	M
	C9854	QERH1CK-107Z	E CAP.	100μF 16V	M
	C9855	QTM71VM-567	E CAP.	560μF 35V	M
	C9856	QERH1ER-227Z	E CAP.	220μF 25V	M
	C9857	QERH1ER-477Z	E CAP.	470μF 25V	M
	C9858	QERH1EM-107Z	E CAP.	100μF 25V	M
	C9860	QERH1CM-477Z	E CAP.	470μF 16V	M
	C9863	QERH1VM-476Z	E CAP.	47μF 35V	M
	C9864	MCB21HK-473X	C CAP.	0.047μF 50V	K
	C9867	MCB21EK-104X	C CAP.	0.1μF 25V	K
	C9869	QERH1CM-107Z	E CAP.	100μF 16V	M
	C9870	MCB21EK-104X	C CAP.	0.1μF 25V	K
	C9871	QERH1VM-476Z	E CAP.	47μF 35V	K
	C9872	QERH1CM-107Z	E CAP.	100μF 16V	M
△	C9873	QCZ9078-102	C CAP.	1000pFAC250V	M
△	C9901	QFZ9079-115	MPP CAP.	2.2μFAC275V	M
△	C9903	QFZ9079-684	MM CAP.	0.68μFAC275V	M
△	C9904	QCZ9078-102	C CAP.	1000pFAC250V	M
△	C9905	QCZ9078-102	C CAP.	1000pFAC250V	M
△	C9907	QFZ9079-684	MM CAP.	0.68μFAC275V	M
△	C9908	QCZ9078-221	C CAP.	220pFAC250V	M
△	C9909	QCZ9078-222	C CAP.	2200pFAC250V	M
	C9910	QFZ0128-474	MPP CAP.	0.47μF 400V ±3%	
	C9911	MCB21HK-103X	C CAP.	0.01μF 50V	K
	C9912	MCB11EK-684X	C CAP.	0.68F 25V	K

△	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C9913	NDC31HJ-102X	C CAP.	1000pF 50V J
△	C9914	QFZ0431-337	E CAP.	330μF 450V M
	C9916	QEHR1VM-4762	E CAP.	47μF 35V M
	C9917	QEHR1VM-4762	E CAP.	47μF 35V M
	C9918	QEHR1VM-4762	E CAP.	47μF 35V M
	C9919	NCF11EZ-105X	C CAP.	1μF 25V Z
	C9921	QEHR1VM-4762	E CAP.	47μF 35V M
	C9922	QEHR1VM-4762	E CAP.	47μF 35V M
	C9923	NC822HK-103X	C CAP.	0.01μF 50V K
	TRANSFORMER			
△	T9201	QQS0086-001	SWITCH.TRANSF.	
△	T9801	QQR1158-001	DRIVE TRANSF.	
△	T9802	QQS0087-001	SWITCH.TRANSF.	
△	T9901	QQR1162-001	CHOKE COIL	
	COIL			
	L9851	QQL25CK-4702	COIL	47μH K
	L9852	QQL2026-S90	INDUCTOR	
	L9853-54	QQL36AK-4702	COIL	47μH K
	L9855	QQL25CK-4702	COIL	47μH K
	L9901	QQL36AK-5612	CHOKE COIL	
	DIODE			
△	D9701	S1WB/A/60-X	BRIDGE DIODE	
	D9702	MA3068/M/-X	ZENER DIODE	
	D9703	MTF56-X	SI.DIODE	
	D9704	MA111-X	SI.DIODE	
	D9705	MTF120U-X	DIODE	
	D9706	MTF56-X	SI.DIODE	
	D9801-03	MA111-X	SI.DIODE	
	D9804	MA3270/H/-X	ZENER DIODE	
	D9805	MA111-X	SI.DIODE	
	D9806	MA3270/H/-X	ZENER DIODE	
	D9807	MTF56-X	SI.DIODE	
	D9808	MA3120/M/-X	ZENER DIODE	
	D9809-10	RS2J-X	DIODE	
	D9811-12	MA111-X	SI.DIODE	
	D9851	MTF56-X	SI.DIODE	
	D9852	YG805C04R	SI.DIODE	
	D9853	YG811S06R	SI.DIODE	
	D9854	YG811S09R	SI.DIODE	
	D9855	MTF56-X	SI.DIODE	
	D9856-57	MA111-X	SI.DIODE	
	D9860-62	MA111-X	SI.DIODE	
	D9866-67	MA111-X	SI.DIODE	
	D9868	1SS133-T2	SI.DIODE	
	D9869	1SS133-T2	SI.DIODE	
△	D9901	D15XB60H	BRIDGE DIODE	
	D9902	D5LG0	SI.DIODE	
	D9903-04	RS1J-X	DIODE	
	D9905	MA3110/M/-X	ZENER DIODE	
	D9908-10	MA111-X	SI.DIODE	
	D9921	MA111-X	SI.DIODE	
	TRANSISTOR			
	Q9701	2SC3751/KLM/	SI.TRANSISTOR	
	Q9702	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q9801	FMG6A-W	DIGI.TRANSISTOR	
	Q9802	FMC3A-W	DIGI.TRANSISTOR	
	Q9803	FP203-X	DIGI.TRANSISTOR	
	Q9804	FMC1A-W	DIGI.TRANSISTOR	
	Q9805	2SK1017-01	F.E.T.	
	Q9806	2SK1017-01	F.E.T.	
	Q9807	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q9812	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q9813	DTC143XKA-X	DIGI.TRANSISTOR	
	Q9815	DTC114EKA-X	DIGI.TRANSISTOR	
	Q9816	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q9817	DTC143XKA-X	DIGI.TRANSISTOR	
	Q9823	DTC143XKA-X	DIGI.TRANSISTOR	

△	Symbol No.	Part No.	Part Name	Description
	TRANSISTOR			
	Q9901	2SK1017-01	F.E.T.	
	Q9902	2SD2134K/V/-X	SI.TRANSISTOR	
	Q9921	2SC2412K/QR/-X	SI.TRANSISTOR	
	IC			
	IC9701	TA78L12F-X	I.C.(MONO-ANA)	
	IC9901	PAL18A4N-X	I.C.(M)	
△	IC9902	TLP421F/D4-GR/X	I.C.(PH.COUPLER)	
△	IC9903	TLP421F/D4-GR/X	I.C.(PH.COUPLER)	
△	IC9904	TLP421F/D4-GR/X	I.C.(PH.COUPLER)	
	IC9905	NJM431U-XE	I.C.(MONO-ANA)	
	IC9906	BA12FP-X	I.C.(MONO-ANA)	
	IC9911	MC7392D-X	I.C.(MONO-ANA)	
	IC9902	MEM0221SU-X	I.C.(M)	
	OTHERS			
△		CEMG002-001Z	FUSE CLIP	(×2)
△	CN9001	QGA790LC1-02	VH POST HEADER	
△	CN9002	KUX01QS-0018	E-SI C WIRE C-C	
	CN9003	QJK016-031623	SIM CR C-B WIRE	
	CN9004	QGA2001CJ-36	W TO B CONNE	
	CN9005	QJK016-037412	SIM CR C-B WIRE	
	CN9006	QGA2001CJ-03	W TO B CONNE	
△	F9901	QMF51D2-6R331	FUSE	6.3A
△	FH9701	CEK45472-001	F.R	2.2Ω 1/4W J
△	J9901	QNC1079-001	AC INLET	
	X9701-03	RQR0006-003X	FERRITE BEADS	
	X9901-02	RQR0006-010X	FERRITE BEADS	
	X9851	RQR0351-003X	FERRITE BEADS	
	X9852-55	RQR0355C-003X	FERRITE BEADS	
	X9901	RQR0006-010X	FERRITE BEADS	
△	LF9901	QQR1005-002	LINE FILTER	
△	LF9902	QQR1173-001	LINE FILTER	
	RY9910	QSK0084-001	RELAY	
△	SW9901	QSW0897-001	POWER SWITCH	
△	VA9901	ERZV10W471CS	VARISTOR	

■ TERMINAL P.W. BOARD ASS'Y (SXG-0J001A)

△ Symbol No.	Part No.	Part Name	Description
OTHERS			
J0101	QMCC008-C01	PIN JACK	
J0102	QWW203-003	PIN JACK	
J0501	CEMB019-001	BNC CONNECTOR	
J0601	QMS305-C01	3.5 JACK	
J0602	QWW203-002	PIN JACK	
J0801	QNZ008J-001	CONNECTOR	

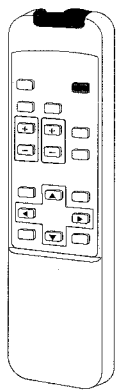
■ POWER CONTROL MODULE (SXG-0P001A)

The following PW boards are supplied as assemblies.

■ VIDEO P.W. BOARD ASS'Y (SXG-0V001A)

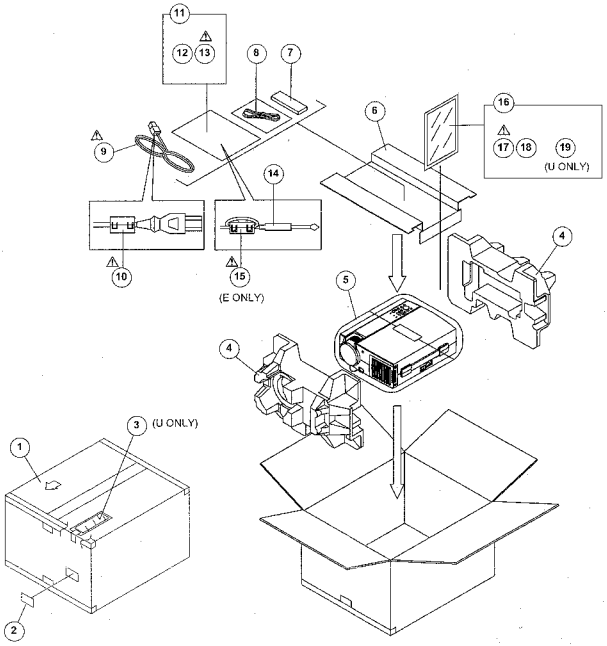
The following PW boards are supplied as assemblies.

REMOTE CONTROL UNIT (RM-M3010G-2)



⚠ Ref No.	Part No.	Part Name	Description
	NTR1033-720090	BATTETY COVER	

PACKING PARTS LIST

⚠	Ref No.	Part No.	Part Name	Description
DLA-G3010ZGU [North American model]				
	1	LC20668-002A	PACKING CASE	
	2	CM47385-00A	POS.SERIAL LABEL	
	3	BT-51019-2	WARRANTY CARD	
	4	LC31309-001D	CUSHION ASSY	2pcs in 1set
	5	LC30230-002A	POLY BAG	
	6	LC40993-001A	ACCESSORY SHEET	
	7	RM-M3010G-2	REMOCON UNIT	
	8	QAM0104-002	PC CABLE	
⚠	9	QMPE100-250-K	POWER CORD	
⚠	10	QQR1176-001	CORE FILTER	
	11	QPA01703005	POLY BAG	
	12	QAM0081-001	CABLE	
⚠	13	QAM0192-001	ADAPTOR PLUG	
	14	QAM0303-001	A/V CABLE	
	16	QPA02503505P	POLY BAG	
⚠	17	LCT0854-001B	INST BOOK	
⚠	18	LCT1017-001A	INST SHEET	
	19	SCUN-0003	CATALOG	
DLA-G3010ZGE [Europe / Asia model]				
	1	LC20668-003B	PACKING CASE	
	2	CM47385-00A	POS.SERIAL LABEL	
	4	LC31309-001D	CUSHION ASSY	2pcs in 1set
	5	LC30230-002A	POLY BAG	
	6	LC40993-001A	ACCESSORY SHEET	
	7	RM-M3010G-2	REMOCON UNIT	
	8	QAM0104-002	PC CABLE	
⚠	9	QMPL050-250-K	POWER CORD	
⚠	10	QQR1180-001	CORE FILTER	
	11	QPA01703005	POLY BAG	
	12	QAM0081-001	CABLE	
⚠	13	QAM0192-001	ADAPTOR PLUG	
	14	QAM0303-001	A/V CABLE	
⚠	15	QQR0963-001	FERITE CORE	
	16	QPA02503505P	POLY BAG	
⚠	17	LCT0863-001B	INST BOOK	
⚠	18	LCT1017-001A	INST SHEET	

PACKING